ANALYSIS OF SELECTED EDUCATIONAL, SOCIO-ECONOMIC AND POLITICAL INFLUENCES ON THE COMMUNITY COLLEGES

By

HOWARD GARY FREEMAN

A DISSERTATION PRESENTED TO THE GRADUATE COUNCIL OF THE UNIVERSITY OF FLORIDA IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF EDUCATION

UNIVERSITY OF FLORIDA

1972

ACKNOWLEDGMENTS

The writer wishes to express his sincere appreciation to Dr. James L. Wattenbarger, Chairman of the Supervisory Committee, for the substantial encouragement and meaningful advice he provided in the preparation of the study. In addition, the writer gratefully thanks Dr. Frank Munger for his very valuable help. Sincere thanks are also extended to the other members of the Committee, Dr. Willis LaVire and Dr. Walter A. Rosenbaum. Without all of their help, this study would not have been possible.

The writer also greatly appreciates the assistance and advice he received from Dr. Enrique Baloyra, Dr. Robert Settle and David Dean. In addition to those who aided specifically in the study, the writer is indebted to Dr. Clifford LeBlanc for his continuous encouragement and understanding.

The writer wishes to sincerely thank his parents, who taught him the value of an education. In addition, he is especially grateful to his wife, Laurie and their children Carolyne and Ronnie for their love, understanding, patience, support and warmth, which only they could provide

TABLE OF CONTENTS

LIST OF TABLES

Table

LIST OF FIGURES

Figure

Abstract of Dissertation Presented to the
Graduate Council of the University of Florida in Partial Fulfillment
of the Requirements for the Degree of Doctor of Education

ANALYSIS OF SELECTED
EDUCATIONAL, SOCIO-ECONOMIC
AND POLITICAL INFLUENCES
ON THE COMMUNITY COLLEGES

by

Howard Gary Freeman

March, 1972

Chairman: Dr. James L. Wattenbarger
Major Department: Educational Administration

The problems identified in this study are: (1) the identification of the community college development; (2) the measuring of educational variables, (3) the identification of important socio-economic variables; (4) the identification of the degree of inter-party competition; (5) the analysis of the impact of educational, socio-economic and political variables on the community college development; and (6) the elaboration of a model which specifies the importance of each of these variables on the community college development.

In this study, forty-two states are identified which have community colleges whose curriculums include the university parallel program and at least either occupational education or continuing education. The procedure used in meeting the needs of the first four problems was data collection.

In regards to the identification of the community college development, each state was identified on the basis of the following seven variables: (1) number of students enrolled in the community colleges, (2) percent of economic support other than student tuition and fees; (3) percent

of the community colleges operated by local agencies; (4) whether or not there is a state-wide plan for the community college development, (5) percent of current expenses provided by the state, (6) whether or not the state would distribute funds regardless of whether college credit was given toward a degree program, and (7) the percent of community colleges which are members of the American Association of Junior Colleges.

In terms of the educational variables, the states were identified on the basis of (1) percent of adults who have completed high school, (2) percent of adults who are four-year college graduates.

The socio-economic variables utilized to identify the states are industrialization, urbanization and per capita income.

Regarding the fourth problem, states are identified on the following variables: (1) Dye's upper house inter-party competitive margin of control index, (2) Dye's lower house inter-party competitive margin of control index, and (3) Dye's governorship inter-party competition closeness of competition index.

The analysis of the impact of educational, socio-economic, and political variables on the community college development was accomplished through the use of factor analysis of the previously identified fifteen variables.

The elaboration of a model which specifies the importance of each of these variables on the community college development was achieved by the application of Blalock's causal model to the significant factors which were identified from the factor analysis.

The factor analysis indicated that the fifteen variables clustered around five significant factors. Two of the factors represented the community college development and the other three factors each described

either the educational level, socio-economic development or the level of inter-party competition.

After the application of Blalock's causal model to the five significant factors, it was determined that high levels of economic development are directly related to higher educational levels in a state. High educational levels result in more inter-party competition. Inter-party competition is directly related to the percent of community colleges operated by local support other than student tuition and fees.

The conclusions of this study are:

(1) States which have high degrees of inter-party competition will be either highly or moderately committed to the community college development.

(2) States which have high levels of socio-economic development are either highly or moderately committed to the community college development.

(3) States which have high educational levels greatly vary in their commitment to the community college development.

(4) Inter-party competition input is directly related to the community college output.

CHAPTER I

INTRODUCTION

Today, most states express concern toward establishing low-cost, comprehensive, community-oriented, two-year colleges which may eventually result in such institutions being located within commuting distance of most of the citizens of the United States (55). Many leaders in the community college development have supported this expended growth (6, 11, 26, 36, 53).

The effect of this concern has been reflected by the rapid growth of community college systems in the various states. In 1967, Gleazer wrote

> In 1900, there were 8 junior colleges, today there are nearly 1,000. In 1900, junior colleges enrolled a total of 100 students, today they enroll near 2,000,000. Nationally, one-third of all beginning college students start their collegiate careers in a junior college. In the near future this figure should reach 50 per cent, a level already attained by several states (18).

In 1968-1969, there were 1,954,116 students enrolled in community junior colleges. This represented a 16.91 per cent increase over the 1967-1968 enrollment of 1,671,440 students (9). In 1972, almost 3,000,000 students are expected to enroll in community junior colleges (22).

Along with this rapid growth in numbers, the role of the community college has also changed. The first conception of a community college was as a two-year college or "little" university. As years passed, however, the concept of this level of education developed into multiple purposes for the community colleges (39).

For example, in 1916, Bogan identified the purposes of junior colleges as first, to offer pre-professional courses in engineering and other departments; second, to offer a well rounded, two-year college course with a definite and complete industrial aim (12).

In 1923, Dorsey considered the place of the junior college in training for universities and professional schools but emphasized the contribution of the junior college to the community through offering a "variety of training peculiarly responsive to the needs of the region... both of socializing and vocational nature" (12)

Hutchins, in an address delivered in 1932, stated that junior colleges must "offer instruction adapted to the students in them rather than to the classical prejudices of our people or the demands of the university" (12).

In 1940, Barnard identified the role of the junior college as follows "The democratic concept demands that the needs of all high school graduates be met, and as I view it the public junior college is the only long-term solution" (12).

In 1956, the Committee on the Public Junior College of the National Society for the Study of Education summarized the four major purposes of community colleges as

> (a) preparation for advanced study, (b) vocational education, (c) general education, and (d) community services (23)

In 1970, the Carnegie Commission favored the comprehensive community college with academic, occupational, and general education programs as against more specialized two-year colleges. According to the Commission, "The comprehensive college provides its students with a wider range of options " (47).

The community college is able to provide low-cost post high school educational opportunity for youth close to their home (47). In order to understand this role, it is necessary to realize that one of the most significant social welfare commitments of the American democratic system is the commitment to free, or almost free, public education for all (29).

The recognition of the strong need for low-cost education provided by the community junior college development has been widely accepted since the 1940's. The Commission on Higher Education appointed by President Truman in 1947, estimated that at least 49 per cent of the population has the mental ability to complete fourteen years of schooling which should lead to gainful employment or to further study. The Commission's report stated:

> As one means of achieving the expansion of educational offerings it considers necessary, this commission recommends that the number of community colleges be increased and that their activities be multiplied (7).

Nearly a decade later, the Committee on Education Beyond the High School, appointed by President Eisenhower, reached the following conclusions:

> The expansion of the "two-year college" has been one of the most notable developments in post high school education in twentieth-century America. ...Community colleges are not designed, however, merely to relieve enrollment on senior institutions. They have a role and an integrity of their own (45).

In 1958, Medsker identified the impact of the community colleges on higher education as a whole:

> Because of the two-year college, (1) opportunity for higher education is broadened, (2) provision is made for expanded curricular offerings, (3) special community services are afforded, (4) guidance is stressed, (5) articulation with both the high school and the senior college is essential, and (6) adequate academic standards are a necessity (37).

In 1964, George Meany called for the expansion of the community college in order to (1) make certain that higher education will be possible for the less wealthy and less brilliant student, (2) help transmit our rapidly growing cultural, intellectual, and scientific heritage to future generations, (3) provide occupational training; (4) provide pre-university education, (5) provide for citizenship, and (6) provide remedial work (37).

In 1966, Thornton defined the community college as follows:

> The community junior college is a free public two-year educational institution that attempts to meet the post-high school educational needs of its local community. In achieving this objective, its faculty studies the local community in order to determine these needs and works vigorously to develop appropriate kinds of instructional organization and techniques. The emphasis in the community junior college is on providing legitimate educational services, rather than on conforming to preconceived notions of what is or is not collegiate subject matter or of who is or is not college material (50).

Because of its various educational services, a community college is better able to meet the needs of all people of the society rather than just the needs of those who are academically oriented. A primary reason given to support this contention is that the program offerings of the comprehensive college are more broadly based in that vocational, technical, general, and adult programs are provided in addition to the traditional academic training (33).

Reflective of the community colleges being able to meet the needs of all people, Shannon states that the community college flexibility and adaptability holds special interest and promise. This interest is expressed by educators and government officials who recognize the demands of modern technology and business enterprise (42). Erickson feels that the community college is destined to be a keystone for fundamental

structural changes which can be expected in higher education in America in the next half-century (13).

In 1968, Roueche identified the valuable role of the community college in American higher education as follows:

> The junior colleges are in a unique position to meet the diverse demands of a rapidly changing society (15).

Stokes, in an address at the American Association of Junior Colleges' national convention, in 1969, stated, "I firmly believe that there is no group better suited to be of immense help in meeting America's greatest challenge--the urban crisis--than the junior colleges" (45).

Recent legislative activity in many states has made it more evident that states are accepting the role of the community colleges in the state's educational system. These legislative acts illustrate Holmes' contention that legal action follows closely, "the prevalent moral and political theories, intuitions of public policy" (5).

In Table 1, the legislative activity for the establishment and expansion of public two-year colleges is identified in each state. California passed the first legislative act in 1907. This act emphasized that the secondary schools should be permitted to extend their programs for an additional two years and/or provide college-transfer programs at their discretion. By 1921, twenty other states had passed similar legislation (5).

The legislative acts were not in abundance until the 1930's. Blocker, Plummer and Richardson believe that the increase of the community colleges during the 1930's was due to the depression and World War II:

> ...Although there were legal provisions for programs in areas other than college-transfer work, the essential stimulus for activation on a broad basis was lacking until the mid-1930's, when federal funds became available, and the 1940's when the war emergency created unprecedented needs for educated and

TABLE 1

STATE LEGISLATIVE ACTS WHICH ESTABLISHED AND EXPANDED THE COMMUNITY COLLEGE

State	Date of Enactment							
Alabama	1961	1962	1963					
Alaska	1953	1962						
Arizona	1927	1931	1947	1949	1953	1960	1961	1962
Arkansas	1962							
California	1907	1917	1921	1927	1931	1935	1937	1943
	1945	1949	1953	1955	1957	1958	1959	1960
	1961	1962	1967	1968				
Colorado	1937	1957	1959	1960	1961	1962	1967	
Connecticut	1937	1959	1962	1965	1967			
Delaware	1967							
Florida	1939	1947	1949	1953	1955	1957	1959	1961
	1962	1965	1967	1968				
Georgia	1958	1962	1964					
Hawaii	1964							
Idaho	1939	1953	1955	1957	1961	1962		
Illinois	1937	1945	1951	1953	1955	1957	1959	1961
	1965	1967						
Indiana	1962							
Iowa	1927	1931	1935	1941	1943	1949	1957	1965
Kansas	1917	1923	1931	1937	1941	1947	1957	1961
	1965							
Kentucky	1936	1946	1960	1962				
Louisiana	1928	1966						
Maine	1961							
Maryland	1960	1961	1962	1965	1968			
Massachusetts	1947	1948	1957	1958	1960	1962	1965	
Michigan	1917	1929	1931	1935	1947	1951	1955	1957
	1960	1961	1963	1964	1965			
Minnesota	1925	1927	1939	1937	1963	1965		
Mississippi	1928	1929	1930	1932	1934	1936	1940	1950
	1960	1962	1964					
Missouri	1927	1961	1965	1966	1967			
Montana	1939	1947	1953	1965				
Nebraska	1931	1941	1943	1947	1955	1957		
Nevada	1967							
New Hampshire	1961	1962						
New Jersey	1946	1962	1963	1968				
New Mexico	1957	1962						
New York	1948	1949	1953	1955	1957	1960	1962	1964
North Carolina	1957	1961	1962	1963	1965			
North Dakota	1931	1941	1949	1957	1959	1962		

TABLE 1 Continued

State	Date of Enactment							
Ohio	1961	1962	1963	1964	1965	1968		
Oklahoma	1939	1941	1962	1968				
Oregon	1949	1951	1957	1959	1961	1962	1965	
Pennsylvania	1963	1965	1967	1968				
Rhode Island	1960							
South Carolina	1935							
South Dakota	1967							
Tennessee	1967							
Texas	1929	1935	1936	1937	1941	1945	1949	1955
	1957	1958	1959	1961	1962	1965		
Utah	1962							
Vermont	1962							
Virginia	1962	1966						
Washington	1941	1943	1945	1961	1965	1967		
West Virginia	1961	1962						
Wisconsin	1945	1951						
Wyoming	1953	1955	1957	1959				

SOURCE: C.E. Blocker, R.H. Plummer, and R.C. Richardson, Jr. The Two-Year College: A Social Synthesis (New Jersey, Prentice-Hall, 1965), pp. 28-30 (5).
R. Yerrington, Junior Colleges: 50 States/50 Years (Washington D.C., 1963), American Association of Junior Colleges (56).
Establishing Legal Bases For Community Colleges (Washington D.C., 1961), American Association of Junior Colleges (14).

> trained personnel. The momentum generated by the problems of the 1930's and the war years was further accelerated by the return of veterans and the increasing educational demands of a technical economy (5).

By 1967, each of the fifty states had some type of legislative activity for the establishment of community colleges. As the role of the community college becomes more important, the legislative activity increases. This is supported by the increased number of legislative acts in the 1950's, and the large number of acts in the 1960's (16, 5).

States are becoming more committed to establishing and expanding community colleges. Along with this commitment is the acceptance of the stated philosophy of most community colleges, that of seeking to provide free education to all who may profit from it (17). As Medsker stated in 1960

> The two-year college is the result of social and economic forces which created it and shaped its character. Without doubt one of the forces is the growing belief that educational opportunity beyond the high school must be equalized (31).

For this equalization process to occur, each state must offer its residents the equalized opportunity for a quality community college education. The Carnegie Commission supports open access to the "open door" college for all high school graduates and otherwise qualified individuals. The Commission reported that

> The community colleges have a particular role to play in assuring equality of opportunity to all Americans. The Commission, while supporting open access, does not believe that all young people either want higher education or can benefit from it. Many of these who can benefit from higher education and want it would be better off in other endeavors for a time after high school before entering higher education. For this latter group, the community college can stand as a continuing open opportunity over a period of years (47).

The question arises as to why certain states offer an extensive community college development, while other states have a very weak

community college development. If this question is placed in proper perspective within an adequate analytical framework, the differences between states in their commitment to the community college development may be determined. Certain differences between the community college development in each state will be identified in a later chapter.

The Problem

Statement of the Problem

This study has for its goals:

(1) The identification of the community college development in forty-two states.

(2) The measuring of educational variables in the forty-two states.

(3) The identification of three significant socio-economic input variables in each of the forty-two states:

a) per capita income,

b) urbanization,

c) industrialization.

(4) The identification of the degree of inter-party competition in each of the forty-two states.

(5) The analysis of the impact of educational, socio-economic and relevant political variables on the community college development.

(6) The elaboration of a model that specifies the importance of each of these variables on the community college development.

Delimitations and Limitations

Delimitations:

(1) The input investigation is limited to political, socio-economic and educational variables.

Limitations

(1) The study is an exploratory field study and is subject to certain limitations indicated in the research design.

(2) Because this study is only concerned with political, socio-economic and educational variables, many other significant input variables will not be identified in this study.

(3) This study is limited to the identification and analysis of community college systems in forty-two states.

Justification of the Study

The growth of the community college development has been rapid, with nearly 2,500,000 students attending community colleges in 1972. Consequently, many important questions have not been asked, which this study may consider (3).

The community college is essential in meeting the needs of many citizens. The question arises as to why an individual living in one state should have a better opportunity to receive an education at this level than an individual living in another state. There is a need to contribute to the understanding of why in some states, the community college development is so weak.

In a recent study completed as a satellite project of the National Finance Project, the target population for community colleges in the United States for 1980 was predicted to range from 4½ million to 12 million students. The extent to which either of these figures will represent the number of students is dependent upon the extent to which the educational services of the community college are provided (54).

Table 2 shows the enrollment in two-year institutions of higher education in 1968 and indicates projections to the year 2000 in number

TABLE 2

ENROLLMENT IN TWO-YEAR INSTITUTIONS OF HIGHER EDUCATION, ACTUAL 1968, AND PROJECTIONS TO 2000, IN NUMBERS AND AS A PERCENTAGE OF TOTAL UNDERGRADUATE ENROLLMENT AND TOTAL ENROLLMENT IN HIGHER EDUCATION

	Number		Percent of Undergraduate Enrollment		Percent of Total Enrollment	
Year	Projection S	Projection C	S	C	S	C
1968	1,870,000	1,870,000	29	29	25	25
1975	3,560,000	3,110,000	38	33	32	28
1980	4,430,000	3,740,000	41	35	34	28
1985	4,280,000	3,610,000	42	35	33	27
1990	4,380,000	3,690,000	42	35	33	28
1995	5,340,000	4,400,000	44	36	35	29
2000	6,620,000	5,340,000	46	37	36	29

SOURCE: Carnegie Commission on Higher Education (47)

of students and as a percentage of total undergraduate enrollment and total enrollment in higher education. These projections were developed by the Carnegie Commission on Higher Education.

There are two projections in Table 2: B and C. The assumption underlying Projection B is based on those states with 30 percent or more of undergraduates enrolled in two-year colleges in 1965 and for most of these with 20 to 30 per cent in two-year colleges. For Projection C, the remaining states have been utilized in the enrollment projection.

Table 2 also indicates a very rapid rise in the proportion of total undergraduates enrolled in two-year colleges until 1980. After 1980, a much slower increase is predicted as the number of young people in the total population declines. This same trend is illustrated by the percent of undergraduate enrollment in two-year institutions which rise rapidly until 1980 and more slowly after that.

If certain input variables are identified which seem to be necessary for a state to establish a sufficient community college development, then the significance of these variables to be used as an index will be understood. In other words, if a certain state has a weak community college development, then by applying the index of variables used in this study, provided they are found to be significant, at least a partial understanding of the reasons for the weak system will be better understood. On the other hand, if a state which has a weakly developed community college system in terms of the input variables should have a high output in terms of community college commitment, then a very careful investigation should be made of that state.

Atwell utilized the input-output relationship in determining which institutional and community characteristic inputs related to

effective transfer program outputs (3). Matthews used the input-output relationship in a more comprehensive manner. Matthews made a study of input-output relationships on selected community colleges (30). Atwell and Matthews found the input-output relationships very useful in understanding cause and effect relationships (3, 30). In 1969, Arney made an extensive study of the comparison of financial support with selected criteria in community junior colleges. He identified forty-two states that had community colleges which were comprehensive enough in course offerings to approach the philosophical assumptions espoused by community college leaders. The definition of community college used in this study is the same definition which Arney used (2).

Assumptions

(1) A strong commitment to develop community colleges represents a high social commitment.

(2) The number of students enrolled in a state's community college system and the total amount of dollars spent annually on community college education are acceptable measures of the state's commitment to the community college development.

(3) Per capita income, urbanization and industrialization are significant socio-economic variables

Definition of Terms

Per capita income--average personal income of the residents in the state.

Urbanization--per cent of population in the state living in an urban area. All the population residing in urban-fringe areas and in unincorporated places of 2,500 or more is classified as urban according to the "current" definition, of the Department of Commerce, Bureau of Census (44)

Industrialization--per cent of the state's inhabitants employed in occupation other than agriculture, forestry and fishing.

Community colleges--for the purpose of this study the terms "community college," "junior college," and "community junior college" were used interchangeably and referred to institutions which are supported by public tax funds, which are controlled and operated by a board, either elected or appointed by a public official or agency, and which offer programs and/or courses limited to the first two years of post-high school education, including the university parallel program and at least one of the two following areas, occupational education and continuing education (2)

Expenditures--expenditures of a state will be viewed in terms of a state's (a) total figure per person, (b) expenditure for those attending, (c) tax effort, and (d) quality for expenditures.

Number of students attending--will be viewed in the following relationships (a) the number of students attending two-year institutions of higher education as a percentage of total undergraduate enrollment, and (b) the number of students actually attending two-year colleges and three alternative projections to 1980 by state

Hypotheses

(1) States which have a high degree of inter-party competition will tend to be highly committed to the community college development.

(2) States which have high degrees of urbanization, industrialization and per capita income will be highly committed to the community college development

(3) States which have a high percent of adults who have completed high school or college will be highly committed to the community

college development.

(4) Inter-party competition input is directly related to community college output.

Procedures

Study Design

This study is designed to investigate certain selected input variables and their relationship with the public community college developments in the fifty states. As utilized by Mattews (30), this investigation could be characterized as an exploratory field study. Such studies are designed to (1) identify significant variables as they exist in a real situation, (2) discover relationships among the variables, and (3) lay a groundwork for later, more systematic and rigorous testing of hypotheses (27).

Data Collection

The data on the inter-party competition and socio-economic inputs are obtained primarily from a review of the research literature in the area of political science. Heavy emphasis is placed on Frank Munger's American State Politics (33). Munger's book contains an up-to-date collection of articles written on the topic of comparative state politics. Such authors as Key, Garceau, Dawson, Robinson, Silverman and Nagel are represented in this book.

Along with Munger's book, Crew's State Politics (8) is utilized. Together, these books provide the necessary data on the subjects of inter-party competition and socio-economic variables.

Community college data concerning the individual states come from the Directory of the American Association of Junior College, 1968-1969 (3). Also, Arney's study, "A Comparison of Patterns of Financial Support

With Selected Criteria in Community Junior Colleges, is utilized to a great extent (2).

Additional data connected with the degree of urbanization, industrialization and per capita wealth are obtained from the Statistical Abstract of the United States, 1970 (44), and from the Comparative State Data File (51).

Data are compiled for the forty-two individual states. Each of these forty-two states has community college comprehensive course offerings which meet the terms of the definition of community colleges used in this study (2). The states which did not have a community college that met the terms of the definition used in this study are not included in the data treatment. These latter states are: Alaska, Maine, New Hampshire, South Carolina, South Dakota, Vermont, West Virginia and Wisconsin. Variable analysis has been done for each state in terms of the socio-economic inputs: urbanization, per capita income, and industrialization. Also each state is analyzed in terms of the total number of students enrolled and the total number of dollars spent on community college education. A Pearson Product moment correlation is made between the socio-economic inputs and the leadership output of each state. The purpose of this correlation is to determine whether or not a relationship exists between the inputs and the outputs.

In terms of the inter-party competition input, a careful analysis is made of each of the forty-two states. The degree of inter-party competition is studied in each state. Findings are reported in tabular form. Any significant relationships are explained.

Organization of the Study

Chapters I, II, and III are introductory chapters. Chapter I

consists of a general introduction to the study, In Chapter II, there is a review of the analytical framework. In this chapter, the input output concept is discussed. Chapter III contains the comparison of the states in terms of their community college development.

In Chapter IV, the data are described. In this chapter the educational, socio-economic, political and community college variables are discussed and explained.

In Chapter V, the typologies are presented. Included in those typologies are the community college development in the states, the level of education in the states and the economic and political developments in the states.

Chapter VI includes the analysis of the study. Included in this chapter is the factor analysis of the variables. In Chapter VII, the model derived as a result of the factor analysis is presented.

Chapter VIII reports the conclusion of the study. Also, in this chapter the hypotheses are discussed, and recommendations for future study are presented.

CHAPTER II

REVIEW OF CONCEPTUAL FRAMEWORK

The purpose of this chapter is to review the literature of the input-output concept and the literature concerning the relationship of socio-economic input variables and political system input variables with policy outputs. The work of Thomas Dye is utilized to place this study in proper perspective. Dye utilized the input-output concept in determining the relationships between political and economic inputs and state output policies such as education and welfare (10).

Input-Output Concept

This concept is frequently applied to business and industry in this nation. Many educators reject theuse of the input-output concept since the objectives of education are not based upon the profit motive. Russell believes that the input-output is of value, and suggests the need for institutions of higher education to utilize the economies of operation and at the same time improve the quality of their service (41).

Austin D. Swanson has done extensive work using an input-output model. Figure 1 is a general input-output model as adapted from Swanson. Swanson dichotomizes the input variables into controllable and non-controllable groups (46)

One of the purposes of input-output research is to identify specific significant input variables and certain output variables that relate to the stated goals of the organization and then determine the relationship between these variables (52).

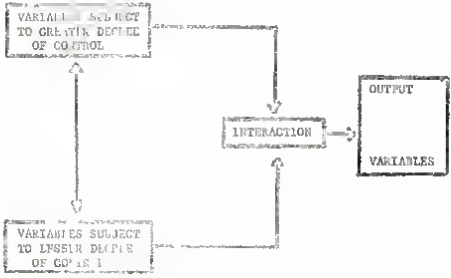

Figure 1. General Input-Output Model

SOURCE: A.D. Swanson, "The Cost-Quality Relationship." The Challenge of Change in School Finance. Proceedings of the Tenth National Conference on School Finance. Washington, D.C.: National Education Association, 1967 (46).

Specifically related to the community college development the input-output concept has been used by Sims, Atwell, Pike, Aikin, Hendrix and Matthews. Sims concentrated on the relationship between certain community college institutional characteristics and the academic performance of the transfers in the State University System of Florida (43, 3, 34, 1, 30).

Atwell, also concentrating on the transfer function of the community college, attempted to identify certain institutional and community characteristics which tended to be related to the effectiveness of community college transfer programs (3).

Pike, in a study of Texas public community colleges analyzed the relationships of current expenditure, enrollment and expenditure per student. He found seventy-two variables to be associated with educational quality (34).

Aikin and Hendrix, in a study of fifteen community colleges in California, studied the relationships between financial input and selected output measures while maintaining statistical control for variations in community characteristics (1).

Matthews investigated certain input variables and specified output variables and the relations between the two types of variables in the context of the community junior college as a comprehensive institution (30).

Inter-Party Competition and Socio-Economic Variables

In 1949, V.O. Key Jr., identified Texas and Florida as having loose multi-factional one-party systems which results in the pursuit of more conservative public policies; i.e., policies that are favorable to the best interests of the have, rather than the have-nots. In other words, state policy regarding welfare and social commitment policies is one of

foot dragging and minimum effort in such services as aid to dependent children, unemployment benefits, old age assistance, etcetera (28).

Dunne Lockard looks at this same question, that is the responsiveness of the state political system to the needs, interests and desires of the people, i.e., the opinion-policy congruence, and asks if a two-party state fairs any better than a one-party state. His study of the New England states shows that two-party states are more responsive and that their expenditures and taxation policies are more liberal (33).

Recent opinion as particularly expressed and researched by Richard Dawson and James Robinson holds that socio-economic factors such as per capita income, industrialization and urbanization are the key factors in explaining differences in policy outputs of the various states and that these same socio-economic factors influence the degree of party competition.

In their article, "Inter-Party Competition, Economic Variables, and Welfare Policies in the American States," they show the above relationships through a series of rank order correlations measuring the relationship between party competition and public welfare policies holding wealth constant, then through a second series holding inter-party competition constant and measuring the correlations between per capita income and welfare policies (33).

These correlations showed that wealth influences welfare policies independent of party competition but that party competition appears to be related to the extent of public social welfare policies through their joint relationship with per capita income.

This is best stated in Dawson and Robinson's own words:

> The level of public social welfare programs in the American states seems to be more a function of socio-economic factors, especially per capita income. High levels of inter-party competition are highly related both to socio-economic needs and to social welfare legislation, but the degree of inter-party competition does not seem to possess the important intervening influence on socio-economic factors and liberal welfare programs that our original hypothesis and theoretical scheme suggested.

Educational Policy Outcomes

To understand the relationship between inter-party competition and socio-economic variables with educational policy outcomes, the work of Thomas Dye represents a valuable reference. Following the systems model, Dye set out to show that environmental socio-economic variables constitute a greater influence on policy outputs of the states than any particular dimension of the political institutions of the states (10).

Dye analyzed the following policy areas: welfare policies, highway policies, educational policies, tax policies and morality regulations. Figure 2 represents a simplified version of the Dye model in which the initial set of possible relationships that he concerned himself with are outlined (10).

Dye's conclusion was that socio-economic inputs had a greater impact on policy outputs than political structures. With respect to education, which is the most relevant output to this study, Dye utilized eleven different indicators. The implication of Dye's work is that characteristics of political systems (e.g., division of two-party control, inter-party competition, voter participation, and legislative malapportionment) predict less of the variation among the fifty state's policies (e.g., education, welfare, highways, taxation and revenues, and regulation of public morality) than does economic development (i.e., urbanization, industrialization, wealth, and education) (10).

Figure 2. A Model for the Analysis of Policy Outcomes

SOURCE T. Dye, Politics, Economics, and the Public: Policy Outcomes in the American State (Chicago: Rand McNally and Co., 1966) (10)

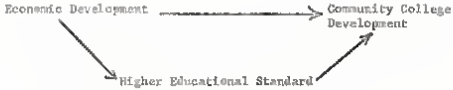

Figure 3. The Influence of Economic Development on the Community College Development

A summary of his results with respect to this policy area is presented in Table 3. Comparing columns 4 and 5 of Table 3, one gets the impression that although the level of economic development seems to predetermine the educational outputs of the states, this is not always so and furthermore in four specific cases the effect of political system variables is more relevant, these four cases being pupil-teacher ratio, mental failures, size of school districts, and state participation (10).

In terms of the justification, assumptions, and hypotheses of this study, Dye's conclusions are to be questioned, because according to Dye's thesis, state commitment to the community college development (a state policy output) will be predetermined by the state level of economic development more than the level of political development. Furthermore, if Dye's thesis is correct, one hypothesis of this study would be trivial because Dye showed that inter-party competition is largely unrelated to any relevant policy output. This is itself would indicate that it is not necessary to assess the influence of any political factor. However, the indicators used in this study are unlike those utilized by Dye (10).

Dye would imply that the states which would benefit the most from the community college development would be precisely those that could least afford to commit themselves to the development. Consequently, one could only hypothesize that the development of the community college would follow the sequence suggested in Figure 3. The implication would be that all other influences not depicted in the figure, such as political factors, are basically irrelevant. In so far as this study is concerned, the contention is that <u>both</u> political system variables and socio-economic input variables are related to higher degrees of commitment to the

TABLE 3

A COMPARISON OF THE EFFECTS OF ECONOMIC DEVELOPMENT VARIABLES AND POLITICAL SYSTEM VARIABLES ON EDUCATIONAL POLICY OUTCOMES IN THE AMERICAN STATES

	Total Effect of Economic Development and Political System Variables	Total Effect of Economic Development Variables	Total Effect of Political System Variables	Effect of Economic Development Variables, Controlling for Political System Variables	Effect of Political System Variables, Controlling for Economic Development Variables
Education					
Per pupil expenditures	.86	.85	.58	.61	.04
Average teacher's salaries	.91	.90	.43	.78	.05
Teachers with B.A.	.85	.70	.64	.54	.47
Teachers with M.A.	.64	.60	.33	.34	.08
Male teachers	.73	.70	.56	.32	.08
Pupil-teacher ratios	.80	.70	.74	.24	.30
Dropout rate	.91	.82	.79	.54	.48
Mental failures	.88	.79	.81	.32	.39
Size of school districts	.69	.52	.67	.05	.28

State participation	.74	.49	.70	.13	.41
Federal participation	.74	.50	.37	.48	.40

SOURCE: T. Dye, Politics, Economics, and the Public Policy Outcomes in the American States (Chicago Rand McNally and Co., 1966) (10).

community college development. Furthermore, it is precisely the conditions in which one or the other is prevalent that must be defined and identified in order to explain the differences in the states' level of commitment to the community college development.

Dye's thesis is supported by studies done by Robinson and Dawson. In their study of forty-six states, they introduced "competing hypotheses" to see whether partisanship is as strong a factor as economic capability. Robinson and Dawson concluded that economic capacity is more closely related to variations in welfare policies than are party competition and other political variables (38).

However, Dye's thesis is not without challenge among political scientists. Lockard and Fenton believe that political input is an important influence on policy output. Lockard extended Key's theorizing to predict that two-party states are more liberal than one-party states in tax and welfare programs. He compared three competitive and three one-party states in New England with results that coincided with predictions about six policies. Fenton similarly compared six states in the Middle West and reached similar conclusions. In other words, both Lockard and Fenton believe that political input is closely related with policy output (38).

Iannaccone and Campbell support the conclusions of Lockard and Fenton. Iannaccone states, "In American life at least, educational policies are inevitably the product of political activity..." Campbell believes, "Educational policy making at all government levels is immersed in politics and by definition educational policy making is political action" (25).

Summary

In Chapter II, the input-output concept is discussed. Numerous

examples are presented to explain the application of the input-output concept to the field of education. Sims, Atwell, Pike, Alkin, Hendrix and Matthews all utilize the input-output concept in explaining relationships between certain inputs and educational outputs.

Inter-party competition variables and socio-economic variables are explained. Dye, Robinson and Dawson believe that socio-economic variables constitute a greater influence on policy outputs of the states than any particular dimension of the political institutions of the state. On the other hand, Lockard, Fenton, Iannaccone and Campbell believe that the political institutions of the state are extremely influential in determining policy output.

CHAPTER III

COMPARISON OF STATES

In 1950, Jesse Bogue identified the community college development as "...one that is growing out of the needs of the masses of people; it is a people's educational movement" (6).

Nearly twenty years later Harlacher and Prentiss identified the community college as being committed by its philosophy to extend the benefits of post-high school education to all members of society (21, 35).

Reflective of the statements by Bogue, Prentiss, and Harlacher is the rapid growth of the community college development. The number of public community colleges has nearly doubled in the decade--from 656 in 1960, to over 1,100 in 1970. The increase in student enrollment has even been greater. The combined full-time and part-time enrollment for these institutions in 1958 totaled 374,672. By 1968, that figure had increased 400 per cent to approximately 1,811,000 (9).

As a result of the growth of the community college development in the states, Gleazer believes that a national overview would see the community college as (1) receiving an increasing proportion of financial support from the state, (2) increasing the number and variety of technical and semi-professional programs, and (3) being comprehensive in its programs.

In 1968, Gleazer also wrote, "Ten years ago, one out of five students in the nation began his work in a community college Now the number is more than one out of three. Soon it will be one out of two" (19).

One of the contributing reasons for the rapid growth of the community college development is the accessibility of the community colleges. In 1968, Willingham did a study of the accessibility in higher education (55).

Each college in the country was rated on a five-point scale based jointly on tuition and selectivity. For the purpose of his study, the two lowest levels were designated "free-access" or simply accessible colleges. Of some 2,600 colleges, 789 or about three in ten are "free-access." Willingham defined "free-access" to mean that the colleges accept most high school graduates and charge no more than $400 in annual tuition.

According to Willingham, the community colleges constitute three-quarters of the total "free-access" group. He states, "Right now the community college is undoubtedly the most generally useful answer to the need for more free-access institutions ..." (55).

Even though the growth of the community college development is very rapid, this growth is not equally represented in each state. The purpose of this chapter is to present a comparison of the community college developments in the several states.

Percent of Undergraduates Enrolled in Two-Year Institutions of Higher Education

Leland Medsker and Dale Tillery have described the growth of the community college development in each of the fifty states. They point out that all fifty states do have one or more public community colleges. Seven states (California, New York, Illinois, Michigan, Florida, Texas, and Washington) accounted for over one-third of all public community colleges

and more than two-thirds of all enrollments in 1968. Medsker and Tillery identified fourteen states in which substantial development has taken place: Arizona, Georgia, Iowa, Kansas, Maryland, Massachusetts, Mississippi, Missouri, North Carolina, Ohio, Oregon, Pennsylvania, Virginia, and Wyoming (32).

The remaining twenty-eight states have experienced relatively little in the development of public two-year colleges. Table 4 gives the enrollment in two-year institutions of higher education as a percentage of total undergraduate enrollment by state, 1968 (32).

Actual Enrollment and Three Alternative Projections to 1980 by State (numbers in thousands)

Another way of comparing the states is to compare the number of students who attend the community college system in each state and the number of students who are projected to be attending community colleges in 1980.

In 1968, there were 1,870,000 students attending community colleges. This figure represented 29 per cent of the nation's undergraduate enrollment. Table 5 contains the actual enrollment in 1968 followed by three projected enrollment figures for 1980. In addition, Table 5 contains the percentage change from 1968-1980.

These three projections were developed by the Carnegie Commission on Higher Education in 1970. The three projections include both full-time and part-time students. The projections are based upon past trends in each state's undergraduate enrollment rates relative to the number of high school graduates in that state during the preceding four years (32).

The following assumptions have been made for each projection:

For Projection A, the assumption is that the proportion of undergraduates in the two-year colleges will remain the same as

TABLE 4

ENROLLMENT IN TWO-YEAR INSTITUTIONS OF HIGHER EDUCATION AS A PERCENTAGE OF TOTAL UNDERGRADUATE ENROLLMENT, BY STATE, 1968

State	Percent
Very high (30 percent or more)	
California	41.2
Florida	52.0
Washington	48.6
Arizona	41.3
Wyoming	39.4
Illinois	35.0
Mississippi	34.7
Michigan	30.5
Oregon	30.4
High (20 to 30 percent)	
Hawaii	29.2
Texas	28.7
North Carolina	28.1
Delaware	27.8
Maryland	25.5
Idaho	25.2
South Carolina	25.1
Connecticut	23.9
Alabama	22.8
Iowa	20.7
Georgia	20.6
Virginia	20.4
Missouri	20.2
Moderate (10 to 20 percent)	
North Dakota	19.9
Massachusetts	18.4
Pennsylvania	17.8
Wisconsin	17.7
New Jersey	17.2
Kansas	17.1
Rhode Island	16.7
Colorado	15.0
Ohio	14.6
Kentucky	14.3
Minnesota	12.2
Oklahoma	11.7
Vermont	11.2

TABLE 4 Continued

State	Percent
Low (less than 10 percent)	
Alaska	9.7
New Mexico	9.0
Tennessee	8.3
Arkansas	7.9
Utah	7.9
West Virginia	7.8
Nebraska	6.7
Louisiana	6.6
Indiana	5.1
Montana	5.0
New Hampshire	4.9
Maine	1.6
South Dakota	1.3
Nevada	0.0

SOURCE: U.S. Office of Education data, adjusted by the staff of the Carnegie Commission on Higher Education (47).

TABLE 5

TWO-YEAR COLLEGE ENROLLMENT, ACTUAL 1968, AND THREE ALTERNATIVE PROJECTIONS TO 1980 BY STATE (NUMBERS IN THOUSANDS)

State	Actual 1968	Projected, 1980			Percentage Change, 1968-1980		
		A	B	C	A	B	C
Alabama	19.9	38.4	68.7	62.2	93.0	245.2	212.6
Alaska	0.7	1.6	6.6	1.3	128.6	842.9	85.7
Arizona	32.1	66.5	82.0	81.9	107.2	155.5	155.1
Arkansas	3.8	6.5	24.6	8.0	71.1	547.7	110.5
California	600.8	989.0	981.2	1022.4	64.6	63.3	70.2
Colorado	13.2	23.6	55.0	32.1	78.8	316.7	143.2
Connecticut	20.4	37.4	63.0	53.5	83.3	208.8	162.3
Delaware	4.5	8.5	13.2	10.3	88.9	193.3	128.9
Florida	95.4	201.1	217.3	225.0	110.8	127.8	135.8
Georgia	19.6	37.3	71.0	44.8	90.3	262.2	128.6
Hawaii	6.3	11.3	16.6	13.3	79.4	163.5	111.1
Idaho	6.6	10.8	16.5	8.9	63.6	150.0	34.8
Illinois	113.7	183.9	234.1	210.7	61.7	105.9	93.2
Indiana	7.4	11.3	53.2	15.1	52.7	618.9	104.1
Iowa	18.0	27.2	42.9	36.0	43.9	127.0	90.5
Kansas	14.1	20.4	36.2	24.0	44.7	156.7	70.2
Kentucky	11.0	20.2	46.5	25.9	69.7	290.8	117.6
Louisiana	6.6	11.5	51.4	22.0	74.2	678.8	233.3
Maine	0.4	0.6	8.0	0.7	50.0	1900.0	75.0
Maryland	27.1	50.6	82.3	68.2	86.7	203.7	151.7
Massachusetts	40.2	62.2	111.7	75.1	54.7	177.9	86.8
Michigan	99.7	157.5	201.1	196.3	58.0	101.7	96.9
Minnesota	16.3	25.0	59.4	36.1	53.4	264.4	121.5
Mississippi	22.0	38.4	50.4	41.6	74.5	129.1	89.1
Missouri	28.6	45.5	78.7	50.0	59.1	175.2	74.8
Montana	1.2	1.9	10.0	3.1	58.3	733.3	158.3
Nebraska	3.6	5.4	19.6	6.8	50.0	444.4	88.9
Nevada	0.0	0.0	6.3	0.0	0.0		0.0
New Hampshire	1.2	2.1	11.6	2.7	75.0	866.7	125.0
New Jersey	24.2	42.7	88.7	78.3	76.4	266.5	223.6
New Mexico	3.0	6.0	23.1	9.0	100.0	670.0	200.0
New York	168.0	270.7	370.2	337.4	61.1	120.4	100.0
North Carolina	37.4	65.4	97.0	91.4	74.9	159.4	144.4
North Dakota	5.0	7.5	12.4	7.9	50.0	148.0	58.0
Ohio	43.3	67.4	142.3	96.4	55.7	228.6	122.6
Oklahoma	10.9	16.1	37.6	16.8	47.7	245.0	54.1
Oregon	25.1	38.9	50.3	53.6	50.1	100.4	113.5
Pennsylvania	56.1	84.5	151.8	120.3	50.6	170.6	114.4

TABLE 5 Continued

State	Actual 1968	Projected, 1980			Percentage Change, 1968-1980		
		A	B	C	A	B	C
Rhode Island	5.7	9.1	18.0	14.9	50.6	215.8	161.4
South Carolina	13.1	21.9	34.2	30.6	67.2	161.1	133.6
South Dakota	0.3	0.5	8.7	0.6	66.7	2800.0	100.0
Tennessee	9.0	14.9	51.6	24.2	65.6	473.3	168.9
Texas	97.0	167.4	244.3	222.1	72.6	151.9	129.0
Utah	4.9	8.3	30.8	10.5	60.4	528.6	114.3
Vermont	1.9	2.7	6.5	2.6	42.1	242.1	36.8
Virginia	22.7	42.4	80.8	70.3	86.8	255.9	209.7
Washington	66.8	101.6	109.7	123.3	52.1	64.2	84.6
West Virginia	4.2	6.0	17.9	6.1	42.9	326.2	45.2
Wisconsin	27.1	45.0	87.6	53.2	66.1	223.2	96.3
Wyoming	4.8	7.9	9.6	8.4	64.6	100.0	75.0

SOURCE: Projections prepared by the staff of the Carnegie Commission on Higher Education, under the direction of Gus W. Haggstrom (47).

that in 1968 (29 percent).

For Projection B, it is assumed that 60 percent of the future growth in undergraduate enrollment will be absorbed in two-year colleges. (This 60 percent figure has been exceeded in four states during the past five-year period).

For Projection C, it is assumed that the future annual increase in percentage of undergraduate enrollment in the two-year colleges in each state will be the same as that estimated for each state from data for the past five-year period. According to Projection C, the proportion of undergraduates enrolled in the two-year colleges, including two-year branches of universities, will rise from 29 percent in the United States in 1968 to about 35 percent in 1980 (32).

Number of Existing Institutions and Future Need by 1980

A third method of comparing the states is to examine the number of existing public two-year institutions in a state and the future need by 1980. The Carnegie Commission recommends that the size of the institution usually should accommodate between 2,000 and 5,000 day students. Table 6 contains the number of existing institutions and the projected need for 1980 (47).

Summary

In Chapter III, Bogue, Prentiss and Harlacher identify the community college as being committed to extend the benefits of post-high school education to all members of society. Reflective of this commitment, the growth of the community college development is rapid, however, this growth is not equally distributed among the states.

The community college developments in the states are compared on the basis of (1) the per cent of undergraduates enrolled in two-year institutions, (2) actual enrollment and three alternative projections to 1980, and (3) the number of existing institutions and future needs by 1980.

TABLE 6

PROJECTED AVERAGE ENROLLMENT IN PUBLIC TWO-YEAR INSTITUTIONS OF HIGHER EDUCATION AND CARNEGIE COMMISSION ESTIMATES OF NEEDS FOR NEW COMMUNITY COLLEGES, 1980

State	Number of Public Two-Year Institutions, 1968	Estimated Needs For New Public Community Colleges, 1980
Alabama	15	4-5
Alaska	6	
Arizona	8	9
Arkansas	4	6-7
California	86	29-34
Colorado	10	6-7
Connecticut	18	2-3
Delaware	1	2-3
Florida	27	11-12
Georgia	13	5-6
Hawaii	6	
Idaho	2	3-4
Illinois	42	5-7
Indiana	7	7-8
Iowa	21	3-4
Kansas	17	2-3
Kentucky	15	2-3
Louisiana	6	4-5
Maine	1	4-5
Maryland	14	2-3
Massachusetts	15	7-8
Michigan	31	8-9
Minnesota	18	4-5
Mississippi	20	2-3
Missouri	10	4-5
Montana	3	2-3
Nebraska	7	2-3
Nevada		2-3
New Hampshire	3	2-3
New Jersey	12	6-9
New Mexico	6	3-4
New York	40	11-14
North Carolina	44	2-3
Ohio	28	6-7
Oklahoma	13	4-5
Oregon	12	3-4
Pennsylvania	43	6-7
Rhode Island	1	2-3
South Carolina	21	
South Dakota		3-4

TABLE 6 Continued

State	Number of Public Two-Year Institutions, 1968	Estimated Needs For New Public Community Colleges, 1980
Tennessee	5	8-9
Texas	40	11-12
Utah	3	5-6
Vermont	1	3-4
Virginia	19	4-5
Washington	22	2-3
West Virginia	5	3-4
Wisconsin	31	2-3
Wyoming	5	1

SOURCE: Estimates developed by the Carnegie Commission staff (47).

Additional methods of comparing the community college developments in the states will be presented in Chapter IV.

CHAPTER IV

DESCRIPTION OF DATA

In Chapter I, the statement of the problem referred to six different goals. The first four of these goals may now be accomplished in terms of the description of the data utilized in this study. In this chapter, the community college development variables, the educational variables, the socio-economic variables and the inter-party competition variables are described.

The Community College Development

Arney identified seven dominant themes in the community college literature. These were identified as: "1) Post-high school education is a public responsibility. 2) Equal educational opportunity for all who may benefit from it should be provided at the junior college level of education. 3) Community junior colleges should be sensitive to local needs, therefore, they should be controlled locally. 4) There should be a state plan for the junior college level of education, co-ordinated by a state agency. 5) The state should assume an important role in the finance of the junior college level of education. 6) State support for the junior college level of education should be provided for both credit and non-credit courses. 7) The state should assume an important role in the provision of capital outlay for junior colleges" (2).

These seven themes which are theoretically relevant can be made operational in the following terms:

Variable 1 - Community College Impact. This refers to the number

of students enrolled in the community college system in the state per 10,000 of those eighteen and over in 1968 (2, 49).

Variable 2 - Economic Support from Public. This refers to the economic support which the community colleges received other than from student tuition and student fees. This refers to the percent of economic support other than student tuition and fees in 1967-1968 (2).

Variable 3 - Local Control. This refers to the percent of the community colleges operated by local agencies in each state in 1967-1968 (2).

Variable 4 - State Plan. This refers to whether or not a state has a state-wide plan for the community college development in 1967-1968 (2).

Variable 5 - State Support. This refers to the per cent of current expenses, for 1968-1968, provided by the state (2).

Variable 6 - Funds Distributed to Non-Credit Programs. This refers to whether or not the state would distribute funds regardless of whether college credit was given toward a degree program (2).

Variable 7 - Membership in the American Association of Junior Colleges. This refers to the per cent of community colleges in a state which are members of the American Association of Junior Colleges. This variable was different from the seventh theme identified by Arney, because it can be measured objectively (2).

The reason why the 1967-1968 figures are utilized is to match them with those figures of the educational, socio-economic and political indicators. The socio-economic and educational indicators are from the 1960 census. The political indicators are from an index average of 1946-1967.

The data from the individual states for the seven variables which characterize the community college development are presented in Table 7. These variables also represent the dependent variables of this study. In this study, the community college development is thought to be dependent on certain educational, socio-economic and political variables.

These seven variables represent the community college development. As stated in Chapter I, another goal of this study is the identification of certain educational variables in the forty-two states.

Educational Variables

Variables 8 and 9 - The educational variables which are utilized in this study are the Percent of Adults Who Have Completed High School and the Percent of Adults Who Are Four-Year College Graduates as of 1960. Adults are those individuals eighteen years and older. The data for these variables are represented in Table 8 (44).

Socio-Economic Variables

In terms of socio-economic variables, the three variables identified are industrialization, urbanization and per capita income.

Variable 10 - Industrialization. As a measure of industrialization the percent of the civilian work force in non-agricultural employment in 1960 is used (44).

Variable 11 - Urbanization. Urbanization is represented by the percent of the population living in urban areas in 1960. Urban areas are those areas designated urban by the Bureau of the Census, 1960 (44).

Variable 12 - Per Capita Income. Per capita income is expressed in terms of per capita personal income in 1960. The data for these variables are found in Table 9 (44).

Another goal of this study was to identify the degree of inter-party competition in each of the forty-two states.

TABLE 7

VARIABLES CHARACTERIZING THE COMMUNITY COLLEGE DEVELOPMENT

State	Community College Impact	Economic Support From Public	Local Control	State Plan
Alabama	80	82	0	0
Arizona	273	99	100	0
Arkansas	20	75	100	100
California	479	100	100	0
Colorado	136	85	100	100
Connecticut	75	80	0	100
Delaware	61	100	0	100
Florida	235	76	100	100
Georgia	54	75	10	100
Hawaii	134	98	0	0
Idaho	64	76	100	0
Illinois	143	88	100	100
Indiana	19	70	100	0
Iowa	102	86	100	100
Kansas	80	86	100	50
Kentucky	50	100	0	0
Louisiana	29	92	0	0
Maryland	118	75	100	100
Massachusetts	66	75	14	100
Michigan	171	71	100	100
Minnesota	68	73	0	100
Missouri	84	83	100	100
Montana	40	83	100	0
Nebraska	40	67	100	0
Nevada	11	66	100	100
New Jersey	47	75	100	100
New Mexico	77	49	100	0
New York	126	79	100	100
North Carolina	102	92	100	100
North Dakota	131	69	20	0
Ohio	67	70	100	0
Oklahoma	49	68	45	100
Oregon	268	77	100	0
Pennsylvania	70	77	100	100
Rhode Island	46	82	0	100
Tennessee	24	87	0	0
Texas	127	81	100	100
Utah	138	87	0	0
Virginia	57	89	0	100
Washington	339	87	100	100
Wyoming	228	83	100	0

SOURCE Adapted from L.H. Arney, "A Comparison of Patterns of Financial Support with Selected Criteria in Community Junior Colleges," doctoral dissertation, University of Florida, 1969 (2).

TABLE 7

VARIABLES CHARACTERIZING THE COMMUNITY COLLEGE DEVELOPMENT

State	State Support	Funds to Non-Credit Programs	American Association of Junior Colleges
Alabama	59	100	94
Arizona	47	100	90
Arkansas	32	100	100
California	32	100	87
Colorado	40	100	57
Connecticut	79	0	58
Delaware	100	100	100
Florida	59	100	100
Georgia	69	100	73
Hawaii	76	100	83
Idaho	40	100	100
Illinois	32	0	95
Indiana	13	100	100
Iowa	55	100	64
Kansas	17	100	95
Kentucky	98	100	81
Louisiana	59	100	25
Maryland	21	100	100
Massachusetts	71	100	93
Michigan	36	100	81
Minnesota	71	100	78
Mississippi	39	0	84
Missouri	31	0	81
Montana	59	0	100
Nebraska	26	0	75
Nevada	4	100	0
New Jersey	50	100	92
New Mexico	0	0	38
New York	32	100	95
North Carolina	79	100	68
North Dakota	55	100	80
Ohio	36	0	40
Oklahoma	59	0	82
Oregon	48	100	75
Pennsylvania	31	100	47
Rhode Island	63	100	100
Tennessee	62	0	86
Texas	51	0	90
Utah	67	100	81
Virginia	79	100	81
Washington	76	100	83
Wyoming	31	100	100

TABLE 8

EDUCATIONAL VARIABLES

State	Percent of Adults who have Completed High School	Percent of Adults who are Four-Year College Graduates
Alabama	30.4	5.7
Arizona	45.7	9.1
Arkansas	28.9	4.8
California	51.9	9.8
Colorado	52.0	10.7
Connecticut	43.9	9.5
Delaware	43.4	10.1
Florida	42.6	7.8
Georgia	31.9	6.2
Hawaii	46.1	9.0
Idaho	48.6	7.2
Illinois	40.4	7.3
Indiana	41.8	6.3
Iowa	46.3	6.4
Kansas	48.2	8.2
Kentucky	27.6	4.9
Louisiana	32.3	6.7
Maryland	40.0	9.3
Massachusetts	47.0	8.8
Michigan	40.9	6.8
Minnesota	43.9	7.5
Mississippi	29.8	5.6
Missouri	36.6	6.2
Montana	47.8	7.5
Nebraska	47.7	6.8
Nevada	53.3	8.3
New Jersey	40.7	8.4
New Mexico	45.4	9.8
New York	40.8	8.9
North Carolina	32.3	6.3
North Dakota	38.9	5.6
Ohio	42.0	7.0
Oklahoma	40.5	7.9
Oregon	48.4	8.5
Pennsylvania	38.1	6.4
Rhode Island	35.0	6.6
Tennessee	30.4	5.5
Texas	39.6	8.0
Utah	55.8	10.2
Virginia	37.9	8.4
Washington	51.5	9.3
Wyoming	52.1	8.7

SOURCE: Comparative State Data File, Department of Political Science, University of Florida, Deck 4 (51).

TABLE 9

SOCIO-ECONOMIC VARIABLES

State	Percent of Civilian Labor Force Employed in Non-Agricultural Employment	Percent of Population Living in Urban Areas	Per Capita Personal Income
Alabama	90.21	55.0	$1,487
Arizona	91.91	74.5	2,037
Arkansas	82.31	42.8	1,379
California	95.41	86.4	2,705
Colorado	92.21	73.7	2,275
Connecticut	98.21	78.3	2,804
Delaware	94.81	65.6	2,735
Florida	93.21	74.0	1,954
Georgia	90.81	55.3	1,639
Hawaii	02.41	76.5	2,369
Idaho	81.01	47.5	1,845
Illinois	95.61	80.7	2,651
Indiana	93.51	62.4	2,194
Iowa	79.31	53.1	1,988
Kansas	86.71	61.0	2,168
Kentucky	85.81	44.5	1,586
Louisiana	92.21	63.3	1,655
Maryland	96.51	72.7	2,347
Massachusetts	98.71	83.6	2,457
Michigan	96.61	73.7	2,321
Minnesota	85.51	62.1	2,115
Mississippi	78.61	37.7	1,204
Missouri	90.51	66.6	2,115
Montana	82.31	50.2	2,039
Nebraska	78.81	54.3	2,110
Nevada	95.41	70.4	2,862
New Jersey	98.51	88.6	2,711
New Mexico	92.71	65.7	1,885
New York	98.21	85.4	2,740
North Carolina	87.01	39.5	1,560
North Dakota	67.21	35.2	1,718
Ohio	96.31	73.4	2,341
Oklahoma	90.61	62.9	1,867
Oregon	92.11	66.2	2,230
Pennsylvania	97.31	71.6	2,241
Rhode Island	98.71	86.4	2,213
Tennessee	89.11	52.3	1,545
Texas	91.21	75.0	1,927
Utah	94.01	74.9	1,964
Virginia	92.21	55.8	1,843
Washington	93.41	68.1	2,345
Wyoming	86.41	56.8	2,260

SOURCE: Comparative State Data File, Department of Political Science, University of Florida, Decks 5 and 6 (51).

Variables 13, 14 and 15 - Inter-party competition is represented by three variables. 1) Dye's Upper House Inter-Party Competition Margin of Control Index. 2) Dye's Lower House Inter-Party Competition Margin of Control Index. 3) Dye's Governorship Inter-Party Competition Closeness of Competition Index. These three variables are based on an index average from 1946 to 1957. The data for these variables are found in Table 10 (10).

Variables 8 through 15 represent the independent variables of this study. In this study the educational, socio-economic and political variables are thought to be influencing the community college development, the dependent variable.

Another way of viewing this relationship is to apply the input-output concept which is discussed in Chapter II. The independent variables (educational, socio-economic and political) are the inputs into the system; the dependent variable (community college development) is the output, a result of the inputs.

Description of the Variables

Variable 1 - Community College Impact. Almost every state has recognized the importance of the community college development by establishing at least one public two-year institution. In order to determine how much recognition each state is giving the community college development, it is necessary to realize how many students are being served by the community colleges in each state. An indicator of this is the percent of students from the total population eighteen years and over who attend community colleges in a state.

Variable 2 - Economic Support from Public. Nearly all community colleges espouse the "open door" policy. The "open door" policy is

TABLE 10

POLITICAL VARIABLES

State	Dye Upper House Inter-Party Competition Margin of Control Index-Average 1946-1967	Dye Lower House Inter-Party Competition Margin of Control Index-Average 1946-1967	Dye Governorship Inter-Party Competition Closeness of Competition Index-Average 1946-1967
Alabama	.48	.63	15.16
Arizona	11.63	30.08	49.90
Arkansas	0.00	1.55	25.87
California	49.58	49.18	38.84
Colorado	44.26	46.99	48.97
Connecticut	46.94	34.01	48.06
Delaware	42.36	43.12	49.46
Florida	5.64	7.24	32.19
Georgia	4.43	2.08	7.17
Hawaii	43.00	25.98	47.28
Idaho	44.08	42.40	46.55
Illinois	36.65	49.14	47.64
Indiana	42.68	41.09	49.85
Iowa	24.83	28.49	49.70
Kansas	20.00	28.58	48.04
Kentucky	38.95	28.64	45.02
Louisiana	0.00	.38	12.05
Maryland	26.09	19.83	48.77
Massachusetts	46.36	42.96	49.77
Michigan	33.00	42.20	49.04
Minnesota	47.74	47.74	47.74
Missouri	36.63	40.22	43.62
Montana	48.98	48.65	49.45
Nebraska	44.84	44.84	44.84
Nevada	39.49	36.52	46.45
New Jersey	34.84	42.65	48.61
New Mexico	23.39	24.39	48.52
New York	41.18	42.75	45.64
North Carolina	4.56	11.21	36.20
North Dakota	17.25	19.68	40.71
Ohio	38.41	35.79	49.46
Oklahoma	12.52	17.41	44.90
Oregon	44.55	36.21	42.11
Pennsylvania	42.00	45.54	47.65
Rhode Island	47.17	32.23	48.47
Tennessee	16.56	21.83	15.40
Texas	.29	.73	17.92
Utah	45.47	46.47	48.19
Virginia	8.21	7.38	37.90
Washington	41.71	47.11	49.06
Wyoming	36.28	39.30	48.11

SOURCE: Comparative State Data File, Department of Political Science, University of Florida, Deck 7 (51).

providing equal opportunity for all who could benefit from the programs offered in the community colleges. An indicator of this is the percent of support given to community colleges from economic factors other than student tuition and student fees which could limit the availability of the community college development.

Variable 3 - Local Control. According to Arney, local support is an integral part of a state community junior college system in which each community college is governed by a local board. In 1962, the Commission on Legislation of the American Association of Junior Colleges placed local control as one of its principles of legislation. Wattenbarger concurred with this Commission when he said, "study after study has emphasized the need to develop local control" (2). Indicative of local control is the percent of community colleges in each state operated by local agencies.

Variable 4 - State Plan. If the community college development is to be effective in meeting the needs of the public, it must be available to the public. One way of assuring this availability is for a state to develop a plan to place a community junior college so that most of the state's population would be within commuting distance of one of them. This is a categorical variable of whether or not a state has a plan to locate a community college within commuting distance of the population (24).

Variable 5 - State Support. State support of community colleges is a dominant theme in the literature. Johns and Morphet have placed emphasis on this aspect of school finance from elementary education through public institutions of higher learning. Wattenbarger, Thornton and Gleazer have each emphasized the importance of state financial support, in that the state is better equipped than local government to procure tax

funds from those who have the resources and distribute them to the areas of most need. Indicative of this variable is the percent of current expenses provided by the state (2).

Variable 6 - Funds Distributed to Non-Credit Programs. If community colleges practice the "open door" policy, they must provide a broad program of education. Blocker states, "the community college offers a type of program which provides for people of all ages and in all stages of personal development to broaden their horizons." Reflecting this idea, a report by the Governor's Commission of Education in Missouri stated, "the provision of state funds only for students taking courses eligible for college credit is not consistent with modern needs." This variable can be represented as a dichotomy according to whether or not the state would distribute funds regardless of whether college credit was given toward a degree program (2).

Variable 7 - Membership in the American Association of Junior Colleges. The American Association of Junior Colleges is the national organization for community colleges. In this study, membership in the American Association of Junior Colleges is viewed as an identification with the community college development. The degree of this identification is reflected in the percent of community colleges in a state belonging to the American Association of Junior Colleges.

Variables 8 and 9 - Percent of Adults Who Have Completed High School and Percent of Adults Who Are Four-Year College Graduates represents the education variables. These variables are indicators to determine if the percent of high school graduates or college graduates is related to a state's commitment to the community college development. These variables are utilized to indicate whether or not individuals in states with

medians of education tend to be more supportive of the community college development than those states with lower educated populations.

Variable 10 - Percent of Civilian Labor Force Employed in Non-Agricultural Employment. This refers to the degree of industrialization of a state. This variable indicates whether or not states with higher degrees of industrialization are more committed to the community college development than those states with lower degrees of industrialization.

Variable 11 - Percent of Population Living in Urban Areas. This variable indicates the degree of urbanization of a state. It is utilized to determine if the states which are more urbanized tend to support the community college development to a greater degree than those states which are less urbanized.

Variable 12 - Per Capita Personal Income. This variable indicates whether or not relatively wealthy people tend to be more committed to the community college development than those who live in states with a lower mean per capita personal income.

Variables 13, 14 and 15 - Dye's Upper House Inter-Party Competition Margin of Control Index, Dye's Lower House Inter-Party Competition Margin of Control Index, Dye's Governorship Inter-Party Competition Closeness of Competition Index. Dye's upper and lower house margins are computed by taking one minus the percent of seats held by the majority party. Thus, a state having a score of "0" indicates no inter-party competition; whereas, a score of .49 would indicate an extremely high degree of inter-party competition. Dye's governorship inter-party competition index is computed by taking one minus the average margin of victories in gubernatorial elections for twenty years. In other words, if the average margin of victory is small, then 1 minus that score would be a large number. Thus,

a score of .70 would indicate a high degree of inter-party competition, whereas, a score of .30 would indicate a large margin of victory and a low degree of inter-party competition. These three variables are averages from 1946 to 1967 degrees of inter-party competition within states. These variables indicate whether or not states with high degrees of inter-party competition tend to support the community college development more than those states with low degrees of inter-party competition.

Summary

In this chapter, seven dominant themes which characterize the community college development are identified. These themes are explained in both theoretical and operational terms.

The educational, socio-economic and political variables are also presented. All of the variables are explained through the use of the tables.

In this chapter, the community college development is identified as the dependent variable and the educational, socio-economic and political indicators are the independent variables. In addition, the dependent variable is thought of as an output, and the independent variables are the inputs.

Finally, in this chapter, all fifteen variables are described, and a rationale is offered for their selection. In Chapter V, the distribution of the forty-two states in relationship to each of the fifteen variables is analyzed.

CHAPTER V

TYPOLOGIES

In this chapter, the elaboration of a set of typologies is presented that may be described as 1) over-all commitment of the states to the community college development, 2) the level of education of the states, 3) the level of economic development of the states, and 4) the degree of inter-party competition prevailing in the states.

The Community College Development in the States

In Chapter IV, justification is offered for each of the seven dependent variables that are chosen to characterize the community college development in the United States. In terms of the arguments offered in the community college literature, these seven variables represent dominant themes in the community college development.

One could make the hypothesis that if a consistent pattern of commitment to the community college development exists, then the same states would fall into the same categories that measure this commitment. In other words, a state which falls into the high category in relationship to one variable should probably fall into the high category in relationship to the other six variables. An indication of whether or not the existence of such a pattern exists is presented in Table 11.

Table 11 describes the pattern of zero-order correlations between the seven dependent variables. The data presented in Table 11 indicate that there is not a very strong association between the seven variables,

TABLE 11

CORRELATIONS BETWEEN THE INDICATORS OF THE STATES' COMMITMENT TO THE COMMUNITY COLLEGE DEVELOPMENT*

	1	2	3	4	5	6
2	.34					
3	.32	-.26				
4	-.13	-.11	.04			
5	-.03	.54	-.70	.16		
6	.20	.23	-.14	.11	.17	
7	.19	.25	.03	.01	.19	.09

*Table values are Pearsonian correlation coefficients.

For instance, the correlation between membership in the American Association of Junior Colleges and the other variables is very low. Therefore, the data seem to indicate that the community college development cannot be typified by one individual variable.

Table 12 is an attempt to classify the forty-two states utilized in this study in relationship to the seven variables, which characterize the community college development. In Table 12, the states are placed in a high, medium and low category. These categories are used to describe an individual state's community college development in relationship to the other forty-one states.

The assignment of each individual state to a particular category is accomplished by the following four procedures: (1) means and standard deviations are computed for every variable, (2) states falling within $\pm$ one standard deviation of the mean are included in the medium categories, (3) states falling above or below this range are included in the high and low categories, respectively, and (4) variables 4 and 6 are dichotomous; therefore, they are categorized as high or low only.

In Table 13, those states which fall into the high categories in relationship to at least four of the seven variables are indicated as highs. In addition, it includes those states which fell into at least three low categories which are categorized as lows. After the state, is the number of high or low categories in which the state fell.

According to Table 12, the states that seem to be the most or least committed to the community college development are not always the same when all seven variables are taken into consideration. Furthermore, if the variables are so unrelated, it is possible for a state to fall in the high category of one variable and the low category in another variable.

TABLE 12

TYPOLOGIES OF COMMUNITY COLLEGE SYSTEMS

Variable	Categories	High	Medium	Low
Community College Impact 1*	n = 42	Arizona, California, Florida, Oregon Washington Wyoming n = 6	Alabama, Arkansas, Colorado, Connecticut, Delaware, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, Rhode Island, Tennessee, Texas, Utah, Virginia n = 35	Nevada n = 1*
Economic Support From Public 2*	n = 42	Arizona, California, Delaware, Hawaii, Keatucky, Louisiana, North Caroline n = 7	Alabama, Arkansas, Colorado, Connecticut, Florida, Georgia, Idaho, Illinois, Iowa, Kansas, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, New Jersey, New York, Oklahoma, Pennsylvania, Rhode Island, Tennessee, Texas, Utah, Virginia, Washington, Wyoming n = 28	Indiana, Nebraska New Mexico, North Dakota, Ohio, Oregon n = 7
Local Control 3*	n = 42	Arizona, Arkansas, California Colorado, Florida, Idaho, Illinois, Indiana, Iowa, Kansas, Michigan, Mississippi, Missouri, Montana, Nebraska, Nevada, New Jersey, New Mexica, New York, North Carolina, Ohio, Oregon, Pennsylvania	Massachusetts, North Dakota, Oklahoma, Georgia n = 4	Alabama, Connecticut, Delaware, Hawaii, Keatucky Louisiana, Massachusetts, Minnesota, Rhode Island, Tennessee, Utah, Virginia n = 14

TABLE 12 Continued

Variable	Categories	High	Medium	Low
Local Control		Texas, Washington, Wyoming n = 24		
State Plan 4*	n = 41	Arkansas, Colorado, Connecticut, Delaware, Florida, Georgia, Illinois, Iowa, Maryland, Massachusetts, Michigan, Missouri, Nevada, New Jersey, New York, North Carolina, Oklahoma, Pennsylvania, Rhode Island, Tennessee, Texas, Virginia, Washington n = 23	———	Alabama, Arizona, California, Hawaii, Idaho, Indiana, Kentucky, Louisiana, Mississippi, Montana, Nebraska, New Mexico, North Dakota, Ohio, Oregon, Tennessee, Utah, Wyoming, n = 18
State Support 5*	n = 42	Connecticut, Delaware, Hawaii, Kentucky, North Carolina, Virginia, Washington n = 7	Alabama, Arizona, Arkansas, California, Colorado, Florida, Georgia, Idaho, Illinois, Iowa, Louisiana, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, New Jersey, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, Tennessee, Texas, Utah, Wyoming n = 29	Indiana, Kansas, Maryland, Nebraska, Nevada, New Mexico n = 6
Funds Distributed to Non-Credit Programs 6*	n = 42	Alabama, Arizona, Arkansas, California, Colorado, Delaware, Florida, Hawaii, Idaho, Indiana, Iowa, Kansas, Kentucky, Maryland, Massachusetts, Michigan, Minnesota, Georgia, Louisiana, Nevada, New Jersey,	——— n = 0	Connecticut New Mexico, Ohio, Illinois, Mississippi, Missouri, Montana, Nebraska, Oklahoma, Tennessee, Texas n = 11

TABLE 12 Continued

Variable	Categories	High	Medium	Low
Funds Distributed to Non-Credit Programs		New York, North Carolina, North Dakota, Oregon, Rhode Island, Pennsylvania, Utah, Virginia, Washington, Wyoming n = 31		
Membership in the American Association of Junior Colleges	7* n = 42	Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Jersey, New York, North Carolina, North Dakota, Oklahoma, Oregon, Rhode Island, Tennessee, Texas, Utah, Virginia, Washington, Wyoming n = 36	n = 0	Louisiana, New Mexico, Ohio, Pennsylvania n = 4

Means*: Variable		Standard Deviations: Variable	
	1 = 111		1 = 94
	2 = 80.38		2 = 10.64
	3 = 66.40		3 = 45.65
	4 = 54 76		4 = 49.77
	5 = 49.50		5 = 23.20
	6 = 73.81		6 = 43.97
	7 = 78.83		7 = 22.28

This means that either the seven variables do indeed measure different aspects of the community college development or that this development is much more complex. Both of these assessments are undoubtedly correct to some degree.

Educational Level

The Bureau of the Census every ten years reports the percent of adults who have completed high school and college. Table 14 utilizes this Bureau of the Census information from 1960. The correlation between variables 8 and 9 is .75. This indicates that the percent of high school graduates in a state is closely related to the percent of college graduates in a state. It is interesting to note the distribution of states falling into the various categories. Variable 8 has six highs, twenty-nine mediums and eight lows. Variable 9 has eight highs, twenty-eight mediums and six lows. This is indicative of the close relationship between variables 8 and 9.

In Table 15, the highs and lows among the states are in relationship to the educational level in the states. To be classified as a high category, a state must fall into one of the high categories in relationship to variables 8 or 9. In order to be classified as a low category, the state must fall into one of the low categories in relationship to variables 8 and 9.

The number next to the state is the times in which the state fell into either the high or the low categories. Assignment of states to certain categories follows the same rationale used in Table 13, the high category in relationship to two of the three variables. To be classified as a low category, the state must fall into the low category in relationship to two of the three variables. Next to each state is the number of times the state is classified in that category.

TABLE 13

HIGHS AND LOWS AMONG STATES IN RELATIONSHIP TO COMMUNITY COLLEGE DEVELOPMENT

States	Highs	States	Lows
Arizona	5	Indiana	3
California	5	Louisiana	3
Delaware	5	Nebraska	4
Florida	5	Nevada	3
North Carolina	6	New Mexico	4
Washington	6	Ohio	4
		Tennessee	3

TABLE 14

TYPOLOGIES OF EDUCATION LEVELS

Variable	High	Medium	Low
8* High School Graduates	California, Colorado, Nevada, Utah, Washington, Wyoming n = 6	Arizona, Connecticut, Delaware, Florida, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Jersey, New Mexico, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, Texas, Virginia n = 29	Alabama, Arkansas, Georgia, Kentucky, Louisiana, North Carolina, Tennessee n = 7
9*	California, Colorado, Connecticut, Delaware, Maryland, New Mexico, Utah, Washington n = 8	Arizona, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Louisiana, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, New Jersey, New York, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, Texas, Virginia, Wyoming, Massachusetts n = 28	Alabama, Arkansas, Kentucky, Mississippi, North Dakota, Tennessee n = 6

*The correlation between 8 and 9 is .75. Assignment of individual states to each particular category follows the same rationale utilized in Table 12.

Means	Variable 8:	41.86	Standard Deviations	Variable 8: 7.25
	9:	7.67		9: 1.53

TABLE 15

HIGHS AND LOWS AMONG STATES IN RELATIONSHIP TO EDUCATIONAL LEVELS

States	Highs	States	Lows
California	2	Alabama	2
Colorado	2	Arkansas	2
Connecticut	1	Georgia	1
Delaware	1	Kentucky	2
Maryland	1	Louisiana	1
Nevada	1	Mississippi	1
New Mexico	1	North Carolina	1
Utah	2	North Dakota	1
Washington	2	Tennessee	2
Wyoming	1		

Economic Development

One of the four major socio-economic inputs utilized by Thomas Dye in his work, the education level of the states, has already been incorporated into this study. Dye also utilized three other inputs that are standard measures of economic development—urbanization, industrialization and income. Table 16 reports the correlations among the socio-economic variables. These correlations indicate a close relationship existing among the three variables. In other words, those states which are industrialized are usually urbanized. Those states which are industrialized and urbanized tend to have residents with above average per capita incomes.

In Table 17, the states are categorized in relationship to the three socio-economic variables. The distribution of the categories is almost identical in terms of numbers among the three variables.

In Table 18, the highs and lows among the states in relationship to socio-economic variables are presented. To be classified as a high category, a state must fall into two of the three high categories in variables 10, 11, and 12. To be classified as a low category, a state must fall into two of the three low categories in variables 10, 11, and 12. The number to the right of the state is the number of times it was classified in the high or the low categories.

Inter-Party Competition

Tables 19 and 20 utilize Dye's index average of 1946-1967. Variable 13 is Dye's upper house inter-party competition margin of control. Variable 14 is Dye's lower house inter-party competition margin of control. Variable 15 is Dye's governorship inter-party competition closeness of competition.

TABLE 16

CORRELATIONS BETWEEN THE STATES' LEVEL OF ECONOMIC DEVELOPMENT

Variable	10	11
11	.84*	
12	.61	.77

*Table values are Pearsonian correlation coefficients.

TABLE 17

TYPOLOGIES OF THE STATES' LEVEL
OF SOCIO-ECONOMIC DEVELOPMENT

Variable	High	Medium	Low
10* Industrialization	Connecticut, Massachusetts, New Jersey, New York, Pennsylvania, Rhode Island n = 6	Alabama, Arizona, California, Colorado, Delaware, Florida, Georgia, Hawaii, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Missouri, Nevada, New Mexico, North Carolina, Ohio, Oklahoma, Oregon, Tennessee, Texas, Utah, Virginia, Washington, Wyoming n = 29	Arkansas, Idaho, Iowa, Mississippi, Montana, Nebraska, North Dakota n = 7
11* Urbanization	California, Illinois, Massachusetts, New Jersey, New York, Rhode Island n = 6	Alabama, Arizona, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Indiana, Iowa, Kansas, Louisiana, Maryland, Michigan, Minnesota, Missouri, Nebraska, Nevada, New Mexico, Ohio, Oklahoma, Oregon, Pennsylvania, Tennessee, Texas, Utah, Virginia, Washington, Wyoming n = 27	Arkansas, Idaho, Kentucky, Mississippi, Montana, North Carolina, North Dakota n = 7
12* Per Capita Income	California, Connecticut, Delaware, Illinois, Nevada, New Jersey, New York n = 7	Arizona, Colorado, Florida, Hawaii, Idaho, Indiana, Iowa, Kansas, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, New Mexico, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, Texas, Utah, Virginia, Washington, Wyoming	Alabama, Arkansas, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Tennessee n = 8

*Assignment of individual states to particular categories follows the same rationale utilized in Tables 12 and 14.

Means: Variable 10 = 90.55
11 = 64.75
12 = 2,105.50

Standard Deviation: Variable 10 = 6.70
11 = 13.84
12 = 405.86

TABLE 18

HIGHS AND LOWS AMONG STATES
IN RELATIONSHIP TO SOCIO-
ECONOMIC VARIABLES

States	Highs	States	Lows
California	2	Arkansas	3
Connecticut	2	Idaho	2
Illinois	2	Kentucky	2
Massachusetts	2	Mississippi	3
New Jersey	3	Montana	2
New York	3	North Carolina	2
Rhode Island	2	North Dakota	2

TABLE 19

CORRELATIONS BETWEEN MEASURES OF INTER-PARTY COMPETITION

Variables	13	14
14	.93*	
15	.75	.73

*Table values are Pearsonian correlation coefficients.

TABLE 20

TYPOLOGIES OF INTER-PARTY COMPETITION
IN THE STATES

Variable	High	Medium	Low
13* Upper House	California, Connecticut, Massachusetts, Minnesota, Montana, Rhode Island n = 10	Colorado, Delaware, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Michigan, Missouri, Nebraska, Nevada, New Jersey, New Mexico, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Tennessee, Utah, Washington, Wyoming n = 26	Alabama, Arizona, Arkansas, Florida, Louisiana, Mississippi, North Carolina, Texas, Virginia n = 10
14* Lower House	California, Colorado, Illinois, Minnesota, Montana, Utah, Washington n = 7	Arizona, Connecticut, Delaware, Hawaii, Idaho, Indiana, Iowa, Kansas, Kentucky, Maryland, Massachusetts, Michigan, Missouri, Nebraska, Nevada, New Jersey, New Mexico, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, Tennessee, Wyoming n = 26	Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, Virginia n = 9
15* Governorship	All Other States n = 35	n = 0	Alabama, Arkansas, Georgia, Louisiana, Mississippi, Tennessee, Texas n = 7

*Assignment of individual states to particular categories follows the same rationale utilized in Tables 12, 14 and 17. Variable #15 turned out to be dichotomous, example: competitive, non-competitive.

Means:	Variable 13:	29.13	Standard Deviation Variable:	13: 17.02
	14:	25.84		14. 16.25
	15:	40.90		15 12.68

TABLE 21

HIGHS AND LOWS AMONG STATES IN RELATIONSHIP TO INTER-PARTY COMPETITION VARIABLES

States	Highs	States	Lows
California	3	Alabama	3
Colorado	2	Arkansas	3
Connecticut	2	Florida	2
Illinois	2	Louisiana	3
Massachusetts	2	Mississippi	3
Minnesota	3	North Carolina	2
Montana	3	Texas	3
Rhode Island	2	Virginia	2
Utah	2		
Washington	2		

The close relationship of the variables is evident by the high correlation. The highest correlation among the fifteen variables is between variables 13 and 14. In addition, the correlations between variables 12 and 14, and 12 and 13 are high. These correlations indicate that variables 13, 14, and 15 are closely related as political indicators.

Table 20 is a presentation of the typologies of party competition in the states. It is interesting to note the even distribution of categories between variables 13 and 14.

Table 21 is the highs and lows among states in relationship to inter-party competition. In order to be classified as a high category, a state must fall into the high category in at least two of the three variables. In order to be classified as a low category, a state must fall into the low category in at least two of the three variables. Next to the state is the number of times a state is classified in either the high or low categories.

Summary

In this chapter, the community college development in each state is identified in relationship to the other states. This procedure is also done for the educational variables, the socio-economic variables and the political variables. Typologies are suggested which place states in high, medium or low categories.

Rank order correlations are done for the seven community college variables, the two educational variables, the three socio-economic and the three political variables. The purpose of these correlations is to determine the degree of relationship among the variables used to characterize a similar subject. The community college variables show weak relationships, whereas, the educational, the socio-economic, and the political

variables show a high degree of close relationship.

Chapter VI, will be an analysis of how the dependent and independent variables relate to each other.

CHAPTER VI

ANALYSIS

In Chapter V, the first four goals of this study are reached. In this chapter, emphasis is placed on discussing the fifth goal of this study -- the analysis of the impact of educational, socio-economic and relevant political variables on the community college development. In other words, this chapter is concerned with the relationship between the dependent variables and the independent variables.

In discussing the relationships among the variables attention is given to the identification of relevant dimensions into which all of the variables may be divided. In essence, this chapter is intended to (1) determine if the fifteen variables actually do fall into the four factors identified in this study, those being the commitment to the community college development in the state, the level of education in the state, the level of economic development of the state, and the level of inter-party competition in the state; and (2) determine if certain of the variables are more representative of one of the four factors than the other variables. For example, if community college development is a factor in this study, then perhaps the variable of local support is found to be more representative of this factor than the variable of community college impact.

The technique of factor analysis is used to meet the two purposes of this chapter. Before the purposes of this chapter can be reached, a discussion of factor analysis is necessary.

Factor Analysis

In 1931, Thurstone introduced factor analysis. Since that time, factor analysis is usually viewed by the uninitiated as a tremendously complex statistical procedure. According to Guertin and Bailey, this view is wrong. They state, "The basic factor analytic model is conceptually simple. Its formulae and computational procedures require only high school mathematics supplemented by the rules of matrix multiplication" (20).

Guertin and Bailey describe factor analysis as follows:

> Factor analysis is disarmingly simple in its basic purpose and becomes complex only through its ramifications. All that factor analysis purports to do is examine a matrix expressing the correlations of each variable with every other variable. Small matrices of intercorrelations can be inspected visually to see which variables seem to covary together but are independent of others in the matrix. In an important sense factor analysis is a formal decision-making process to explicate subsets of covarying variables no matter how numerous they may be (20).

Kerlinger writes of factor analysis in terms of:

> A method for determining the number and nature of the underlying variables among large numbers of variables. More succinctly, factor analysis is a method for determining k underlying variables (factors) from n sets of measures, k being less than n (27).

Rummel lists the goal of parsimony or data reduction among the uses of factor analysis. He states that in this sense factor analysis can be useful for "reducing a mass of information to an economical description" (40).

In this study, factor analysis is utilized to determine if the fifteen variables of this study do indeed cluster into four distinctive factors with theoretical significance attached to them. It is important to determine if factor analysis produces four factors that group the

fifteen variables in terms of (1) commitment to the community college development in the state, (2) level of education in the state, (3) level of economic development of the state, and (4) level of inter-party competition in the state.

A preliminary step towards a factor analytic confirmation of such a pattern implies the computation of a matrix of correlation for the variables. Such a matrix is depicted in Table 22. This matrix reveals that the overall pattern of relationships among the fifteen variables is moderate.

The actual factor analysis of this matrix is performed with the use of a computer program for common factor analysis developed by Guertin and Bailey. Guertin and Bailey believe the purpose of factor analysis is, "defining the patterns of common variation among a set of variables" (20).

From a purely technical standpoint, common factor analysis is based on the criterion of factorization. Factorization implies the use of squared multiple correlation coefficients as the initial estimates of the communalities among the variables. Communalities refer to the proportion of variance that a variable has in common with the other variables.

After determining the zero order correlations among the variables, a factor analysis of the correlation produces seven factors on which the fifteen variables cluster. The rotated matrix of these seven factors is presented in Table 23. By examining this matrix, five significant factors are recognized. These factors are important, because each of them has several variables which cluster on them.

The factors which do not have at least two variables which cluster on them are factors VI and VII. A close view of these factors indicates

TABLE 22

ZERO ORDER CORRELATIONS AMONG
THE FIFTEEN VARIABLES

2	3	4	5	6	7	8	9	10	11	12	13	14	15	Variable
.34	.32	-.13	-.03	.20	.19	.40	.41	.10	.26	.22	.12	.13	.09	1
	-.26	-.11	.54	.23	.25	-.10	.08	.03	.00	-.03	-.05	-.03	-.13	2
		.04	-.70	-.14	.03	.30	.07	-.04	.05	.18	.06	.22	.23	3
			.16	.11	.01	-.10	.11	.30	.33	.31	-.01	.01	.11	4
				.17	.19	-.24	-.02	-.02	-.12	-.17	-.07	-.15	-.13	5
					.09	.12	.11	.10	.06	.09	.05	.05	.14	6
						-.14	-.08	-.13	-.04	-.07	-.02	.02	.02	7
							.75	.14	.39	.61	.64	.66	.64	8
								.49	.61	.64	.43	.42	.47	9
									.84	.61	.29	.25	.23	10
										.77	.46	.43	.38	11
											.72	.71	.66	12
												.93	.75	13
													.79	14

TABLE 23

ROTATED FACTOR MATRIX*

Variables	Factors						
14	.93	.11	.16	.10	.09	-.06	-.03
13	.93	-.04	.20	.09	-.02	-.10	-.02
15	.80	.12	.08	.19	-.05	.16	.13
12	.64	.11	.55	.27	-.02	.19	.04
3	.11	.86	-.04	.13	.11	.08	-.09
5	-.08	-.81	-.08	.01	.34	.17	.09
10	.13	-.05	.88	.08	-.07	.17	.07
11	.30	.06	.85	.23	.01	.13	.00
9	.32	-.03	.41	.75	-.02	.04	.07
8	.59	.20	.06	.69	-.12	-.13	.13
2	-.08	-.37	.07	.09	.62	-.16	.17
1	.04	.24	.16	.45	.51	-.21	.18
7	.02	-.01	-.09	-.08	.47	.07	.04
4	.01	-.03	.29	-.05	-.02	.70	.08
6	.05	-.11	.04	.08	.15	.06	.52
Eigen-values	3.38	1.70	2.19	1.46	1.04	.74	.40

*Proportion of explained variance: total = 77.76%
common = 98.70%

Table values refer to the loading of each variable on the seven factors. Eigenvalues are simply the column sums of the squares of the loadings.

that variable 4 is the only variable which heavily loads on factor VI, and variable 6 is the only variable which heavily loads on factor VII.

A further rationale for not recognizing factors VI and VII is both variables 4 and 6 represent dichotomous or categorical variables, in that, they are either yes or no. There is no middle area in explaining the variables, variables 4 being whether or not a state has a state plan and variable 6 being whether or not funds are distributed to non-credit programs.

Since variables 4 and 6 are dichotomous, it is not surprising that they come out on their own in the analysis. Furthermore, Table 23 indicates that the correlations between variables 4 and 6 and the other five factors are quite low.

Excluding factors VI and VII, the five remaining factors essentially follow the anticipated pattern. The community college development is represented by factors II and V. Factor IV is descriptive of the educational level in the state. Factor III represents the economic development in the state. Factor I describes the level of inter-party competition in the state.

Variables 3 and 5 heavily load on factor II. Variable 3 is the degree of local control in a state's community college development. Variable 5 is the percent of current expenses provided by the state. Thus, factor II is now identified as a community college development factor in this study.

Variables 1, 2 and 7 heavily load on factor V. Variable 1 is the percent of students from the total population eighteen years and over who attend community colleges in a state. Variable 2 is whether or not the state would distribute funds regardless of whether college

credit is given toward a degree program. It is interesting that variable 2 has a heavy loading on a factor on which other variables are loaded. Variable 2 is like variables 4 and 6, in that, all three variables are dichotomous. Variable 7 is the percent of community colleges in a state belonging to the American Association of Junior Colleges. Thus, factor V is now identified as a community college development factor in this study.

Variable 8 and 9 heavily load on factor IV. Variable 8 is the percent of adults, in a state, who have completed high school. Variable 9 is the percent of adults, in a state, who are four-year college graduates. Thus, factor IV is now identified as the educational level factor in this study.

Variables 10 and 11 heavily load on factor III. Variable 10 is the percent of the civilian labor force employed in non-agricultural employment which is a measure of the degree of industrialization in a state. Variable 11 is the percent of population living in urban areas. Thus, factor III is now identified as the level of economic development factor in this study.

Variables 12, 13, 14 and 15 heavily load on factor I. Variable 12 is the per capita personal income of a state. Variable 12 is a measure of the economic development of a state; however, variables 13, 14 and 15 describe the level of inter-party competition in the state. Variable 13 is Dye's upper house inter-party competition margin of control index. Variable 14 is Dye's lower house inter-party competition margin of control index. Variable 15 is Dye's governorship inter-party competition closeness of competition index. Variables 13, 14 and 15 loaded heavier on

factor I than did variable 12. Thus, factor I is now identified as the level of inter-party competition factor in this study.

Summary

In this chapter, primary emphasis is placed on discussing the fifth goal of this study: the analysis of the impact of educational, socio-economic and relevant political variables on the community college development.

To achieve this goal, a factor analysis is done on the fifteen variables. The factor analysis indicates: (1) the community college development is characterized by factors II and V. (2) Factor IV represents the educational level in the state. (3) Factor III describes the economic development in the state. (4) Factor I represents the level of inter-party competition in the state.

The five factors identified in this chapter can now be used to achieve the fifth and sixth goals of this study. By using the factor analysis in Chapter VI, a further analysis of the impact of the educational, socio-economic and inter-party competition factors on the community college development can be done in Chapter VII. In addition, a model can now be elaborated which explains the importance of each of these factors on the community college development.

CHAPTER VII

MODEL

In this chapter, there is a further analysis of the impact of the educational, socio-economic and inter-party competition factors on the community college development. Also, a model is elaborated which explains the importance of each of the factors on the community college development.

From the factor analysis, five important factors are identified. These factors are I, II, III, IV, and V. Factors II and V represent the community college development in the state. Factor IV describes the educational level in the state. Factor III is the economic development in the state. Factor I represents the level of inter-party competition in the state.

In this study, factors I, III and IV represent the independent variables, these factors being the inter-party competition level, the economic development level, and the educational level, respectively. Factors II and V are the dependent variables in this study, since both factors represent the community college development.

Further Analysis

To analyze further the impact of the independent variables on the dependent variables, it is necessary to identify each factor by a specific variable. The purpose of this is to be able to better determine any significant relationships which exist among the factors. The variable selected to represent each factor is the variable which has the heaviest loading on the factor.

Using this method of identification the variables which best represent factors I, II, III, IV, and V are variables 14, 3, 10, 9, and 2 respectively. It is noted that while variable 14 and variable 13 in factor I each have a loading of .93, when the loadings are carried out to four decimal places, variable 14 is loaded heavier on factor I than variable 13.

Variable 2 is the economic support from sources other than tuition and fees. In this study, this variable is interpreted as an indicator of the service-support aspect of the community college development. The rationale behind this identification is based on the reasoning offered in Chapter IV. If a community college is to practice the philosophy of keeping its "doors" open to all who can benefit, then the states should be willing to be of service to as many of its residents as possible. By keeping tuition and fees to a minimum, a state is providing a service-support function in giving more students the opportunity to benefit from the educational programs offered by the community colleges.

Variable 3 is the local control of community colleges. In this study, this variable is interpreted as a control-support aspect of the community college development. The Educational Facilities Laboratory, Inc., supports the rationale of local control in the following way: "A good community college is organized and controlled to represent the people it serves" (2). Wattenberger summarizes this rationale as follows. "Study after study has emphasized the need to develop local control" (2). Thus, local control is supportive of the philosophy of serving the students who can benefit from the educational opportunities of a particular local community college.

Variable 9 is interpreted as a measure of the educational level

of a state. The rationale is that the percent of adults who have their college degree is a good indicator of the educational level of a particular state.

Variable 10 is interpreted as an indicator of the economic level of a state. The percent of the working force employed in non-agricultural employment is in reality the degree of industrialization of a state. Thus, industrialization is interpreted as an economic indicator.

Variable 14 is interpreted as a political indicator of the level of inter-party competition in a state. The rationale being that an index of the margin of control in the lower house in each state over a twenty-year period is a good indicator of the level of inter-party competition in each state.

With these five variables representing the five factors a model can now be elaborated which explains the importance of each of the factors on the community college development.

Model

Hubert M. Blalock has developed a method that can be used in the development of causal models. According to Blalock,

> Such causal models involve (1) a finite set of explicitly defined variables, (2) certain assumptions about how the variables are interrelated causally, and (3) assumptions as the effect that outside variables, while operating, do not have confounding influences that disturb the causal patterning among the variables explicitly being considered (4).

In this study, there are two dependent and three independent variables. The dependent variables are 2 and 3, and the independent variables are 9, 10 and 14.

Figure 4 depicts the pattern of direct relationships between the two dependent and the three independent variables. According to Blalock, this set of correlations that is represented in the figures can be

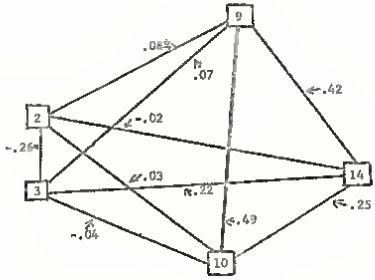

Figure 4. Initial Model

---

*Variables are identified by their number. The lines connecting them represent the overall pattern of association and the numerals represent the magnitude of the zero-order correlations.

simplified by the use of a number of techniques. One of these techniques is simply to control for lower order partials in order to show that some of the relationships are actually spurious (4).

The method proposed by Blalock checks the accuracy of a number of prediction equations which are derived from the observations of the correlations or from a theoretical argument. For example, in this study, Figure 4 indicates that the order of the magnitude of some of the relationships is so small that these relationships are practically non-existent. Following this reasoning, one can assume that the relationships between the service-support factor, variable 2, with the economic development factor, variable 10, and the inter-party competition factor, variable 14, are spurious. The relationship between variables 2 and 10 is .03, and the relationship between 2 and 14 is -.02. To determine if these relationships are spurious, Blalock would set up the following mathematical equations:

$$r_{2\ 10} = 0 \text{ and } r_{2\ 14} = 0$$

This same procedure can be done to determine the relationship between the central support factor, variable 3, with the educational level, variable 9, and the economic development factor, variable 10. According to Blalock, this would imply the following equations.

$$r_{3\ 9} = 0 \text{ and } r_{3\ 10} = 0$$

In these equations, the r would represent the relationship, the subscripts 3, 9, and 10 refer to their respective variables. If the relationship equals zero or approached zero, then the relationship is spurious.

The determination of whether or not the previous relationships are

spurious is to control for intervening variables in each relationship. If after controlling for the intervening variables in each variable, the relationship does not disappear, then the relationship is said not to be spurious.

Following the pattern of relationships in Figure 4, one would have:

$$r_{2\,10} = r_{2\,9}\, r_{9\,10} = .03 \text{ versus } (.08)(.49) = .04$$

In this equation, the question is simply to determine if in the relationship the product of $r_{2\,10}$ equals the product of $r_{2\,9} \cdot r_{9\,10}$. In this case, $r_{2\,10}$ equals .03 and $r_{2\,9}\, r_{9\,10}$ equals (.08)(.49) which equals .04. Because the difference between .03 and .04 approaches zero, the relationship between variable 2 and variable 10 is spurious.

This same relationship can be understood through the use of algebra. Algebraically this is equivalent to

$$r_{2\,10\cdot 9} = \frac{r_{2\,10} - (r_{2\,9})(r_{10\,9})}{\sqrt{1 - r_{i\,k}^2}\,\sqrt{1 - r_{j\,k}^2}}$$

Therefore, one only works with the numerator of this expression in order to determine if the equation approaches zero. It approaches zero when the magnitude of the zero-order correlation coefficient between the extremes, variables 2 and 10 in this case, is very close to the magnitude of the product of the correlation coefficients for the "middle" relationships 2 with 9 and 9 with 10 in this case.

The magnitude of the discrepancy is small, therefore, the relationship between variables 2 and 10 is spurious. This cross multiplication is equivalent to the operation of partialling (4). Likewise,

$$r_{214} = r_{29}\, r_{914} = -.02 \text{ versus } (.08)(.42) = .03$$

$$r_{39} = r_{314} r_{914} = .07 \text{ versus } (.22)(.25) = .09$$

$$r_{310} - r_{314}r_{1014} = -.04 \text{ versus } (.22)(.25) = .06$$

The same could be said about the relationship between economic development and party competition. Therefore,

$$r_{1014} = 0, \text{ if } r_{1014} = r_{910}\, r_{914} = .25 \text{ versus } (.49)(.42)=21.$$

Taking away the lines representing the relationships that this analysis has shown to be spurious, one can propose the model depicted in Figure 5 for the five factors discussed in the previous chapter.

Essentially, the model in Figure 5 is a developmental sequence of variables. The model implies that the existence of high levels of economic development in a state, variable 10, leads to higher educational levels in the state, variable 9. The higher educational levels, leads to higher levels of inter-party competition in a state, variable 14. As a result of higher levels of inter-party competition, there is more of the control-support aspect of community colleges in a state. The more of the control-support aspect of community colleges, the less the service-support aspect of the community college.

By squaring the correlation coefficients, the amount of variance attributed by each of the preceeding variables in the developmental sequence can be determined. In other words, by squaring the correlation coefficient between variables 10 and 9, one realizes that the level of economic development explains 24 per cent of the variance of the educational level in the state. In sequence, the educational level explains 17 per cent of the level of inter-party competition in a state. The level of inter-party competition accounts for 5 per cent of the control-support aspect of the community college development in a state. In turn, the control-support aspect explains 7 per cent of the service-aspect of the community college development in a state.

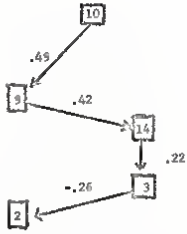

Figure 5. Proposed Model*

*Assumptions:	Results:
$r_{210} = 0$	$r_{210} = r_{29}r_{910} = .03$ versus $(.08)(.49) = .04$
$r_{214} = 0$	$r_{214} = r_{29}r_{914} = -.02$ versus $(.08)(.42) = .03$
$r_{1014} = 0$	$r_{1014} = r_{910}r_{914} = .25$ versus $(.49)(.42) = .21$
$r_{39} = 0$	$r_{38} = r_{314}r_{814} = .07$ versus $(.22)(.42) = .09$
$r_{310} = 0$	$r_{310} = r_{314}r_{1014} = -.04$ versus $(.22)(.25) = .06$
$r_{29} = 0$	$r_{29} = r_{23}r_{314}r_{914} = .08$ versus $(-.26)(.22)(.42) = -.02$

Summary

In this chapter, there is a further analysis of the impact of the educational, socio-economic and inter-party competition factors on the community college development. To accomplish this further analysis, the variable which has the heaviest loading on each of the five factors is identified. Using this method of identification, the variables which best represent factors I, II, III, IV and V are variables 14, 3, 10, 9 and 2 respectively.

Using these variables, an initial model is presented. This model depicts the degree of relationships among the five variables. This model is based on the causal model developed by Norbert Blalock. This model is intended to determine if certain relationships among the variables actually exist or are spurious.

The result of applying Blalock's method to Figure 4 is the model which is presented in Figure 5. In this model, the spurious relationships are removed. The model indicates that variable 10 is directly related to variable 9. In turn, variable 9 is directly related to variable 14. Furthermore, variable 14 is directly related to variable 3 which is inversely related to variable 2.

In terms of what the variables represent, it can be determined that high levels of economic development lead to higher educational levels. Next, higher educational levels lead to higher levels of inter-party competition. The more inter-party competition, the higher the level of the control-support aspect of the community college development which inversely contributes to the level of the service-support aspect of the community college development in a state.

CHAPTER VIII

CONCLUSION

In Chapter I, the community college development is discussed. In this discussion, the rapid expansion of the community college development is identified. The degree of the expansion of the community college development is different in each state. The purpose of this study is to determine whether or not the degree of inter-party competition, the degree of economic development, or the educational level in a state contributes to the expansion of the community college development in a state.

To determine if these relationships exist, a framework is needed. In Chapter II, the input-output relationship is discussed. In terms of this concept, the question now becomes whether or not educational, economic or political inputs contribute to community college development outputs.

In Chapter III, the difference among the community college developments in the forty-two states identified is explained. In Chapter IV, seven variables are discussed which characterize the community college development which is the dependent variable in this study. In addition, two variables are selected to represent the educational level, three variables are identified to represent the level of economic development, and three variables are chosen to represent the degree of inter-party competition in a state. In this study, these variables are the independent variables.

In Chapter V, the community college development, the educational

level, the socio-economic level, and the level of inter-party competition in each state is identified in relationship to the other states. Rank order correlations are done for the seven dependent variables and the eight independent variables. The purpose of these correlations is to determine the degree of relationship among the variables used to characterize a similar subject. The community college variables show weak relationships, whereas, the educational, socio-economic and political variables show a high degree of relationship.

In Chapter VI, a factor analysis is used on the fifteen variables, to determine the impact of the educational, the socio-economic, and the inter-party competition factors on the community college development. The factor analysis indicates five factors which are important in explaining the relationships among the variables. The factor analysis indicates: (1) the community college development is characterized by factors II and V. (2) Factor IV represents the educational level in the state. (3) Factor III describes the economic development in the state. (4) Factor I represents the level of inter-party competition in the state.

In Chapter VII, there is a further analysis of the impact of the educational, the socio-economic and the inter-party competition factors on the community college development. In order to accomplish this further analysis, the variable with highest loading on each of the five factors is identified. Using this method of identification, the variables which best represent factors I, II, III, IV, and V, are variables 14, 3, 10, 9 and 2 respectively. Blalock's causal model is applied to these variables.

The purpose of the model is to determine if certain relationships among the variables actually exist or are spurious.

The model indicates that high levels of economic development lead to higher educational levels. Next, higher educational levels lead to higher levels of inter-party competition. The more inter-party competition, the higher the level of the central-support aspect of the community college development which inversely contributes to the level of the service-support aspect of the community college development in a state.

In this chapter, the four hypotheses identified in Chapter I are discussed. In addition, recommendations for future study are suggested.

Hypotheses

In Chapter V, Table 13 identifies those states which fall into high and low categories in relationship to community college development. Of the forty-two states identified, the states which have the highest level of community college development are: Arizona, California, Delaware, Florida, North Carolina, and Washington. Of the forty-two states identified, the states which have the lowest level of community college development are: Indiana, Louisiana, Nevada, Nebraska, New Mexico, Ohio and Tennessee.

Hypothesis (1): States which have a high degree of inter-party competition will tend to be highly committed to the community college development.

Table 21 identifies the highs and lows among states in relationship to inter-party competition. The states which have the highest degree of inter-party competition are: California, Colorado, Connecticut, Illinois, Massachusetts, Minnesota, Montana, Rhode Island, Utah, and Washington. The states which have the lowest degree of inter-party competition are Alabama, Arkansas, Florida, Louisiana, Mississippi, North Carolina, Texas and Virginia.

Of the ten which have the high degree of inter-party competition, two states are also highly committed to the community college development. Those states are: California and Washington. The remaining eight states have medium levels of community college development. No state which has a high level of inter-party competition has a low level of community college development.

In this study, the first hypothesis is true for 20 per cent of the states which have high levels of inter-party competition. The statement that could now describe all of the states which have high levels of inter-party competition is as follows: States which have a high level of inter-party competition tend to be either highly or moderately committed to the community college development.

Hypothesis (2): States which have high degrees of urbanization, industrialization and per capita income will be highly committed to the community college development.

In Chapter V, Table 18 describes the highs and lows among states in relationship to the socio-economic variables of urbanization, industrialization, and per capita income. Those states identified as high level economic states are: California, Connecticut, Illinois, Massachusetts, New Jersey, and Rhode Island. Those states which have low levels of economic development are: Arkansas, Idaho, Kentucky, Mississippi, Montana, North Carolina and North Dakota.

Of the seven states which are identified as high economic development states, one out of the seven is also highly committed to the community college development. That state is California. The remaining six states which have high levels of economic development are moderately committed to the community college development. None of the states which

have a high level of economic development are low in their commitment to the community college development.

The second hypothesis was true for 14 per cent of the states. The statement which applies to all of the states which have high levels of economic development is as follows. states which have high levels of economic development are either highly or moderately committed to the community college development.

> Hypothesis (3) States which have a high percent of adults who have completed high school or college will be highly committed to the community college development.

In Chapter V, Table 15 describes the highs and lows among states in relationship to educational levels. Those states which have a high educational level are California, Colorado, Connecticut, Delaware, Maryland, Nevada, New Mexico, Utah, Washington, and Wyoming. Those states which have low educational levels are Alabama, Arkansas, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, North Dakota, and Tennessee.

Of the ten states which have high educational levels, three of the states are also highly committed to the community college development. These states are California, Delaware and Washington. Two of the states which have high educational levels also have a low commitment to the community college development. Those states are Nevada and New Mexico. The remaining five states are moderately committed to the community college development.

In this study, the third hypothesis is true for 30 per cent of the states which have high levels of education. On the other hand, 20 per cent of the states which have high levels of education are low in their commitment to the community college development.

Discussion of Hypotheses (1), (2), and (3)

The only two states which have a high educational level, a high economic level and a high level of inter-party competition are California and Connecticut. California is also highly committed to the community college development; whereas, Connecticut is moderately committed to the community college development.

Washington and Delaware are also highly committed to the community college development. Washington also has a high educational level and a high level of inter-party competition. Delaware has a high educational level.

On the other hand, the three remaining states which are identified as being highly committed to the community college development are not classified as a high level state in education, economy, and inter-party competition. These states are Arizona, Florida and North Carolina. In fact North Carolina is a low level state in regards to education, economy and inter-party competition. Arizona is moderate in its levels of education, economy and inter-party competition.

Hypothesis (4): Inter-party competition input is directly related to community college output.

In Chapter II, Dye, Robinson, and Dawson concluded the socio-economic inputs had a greater impact on policy outputs than political structures. According to Dye's thesis, state commitment to the community college development, a state policy output, will be predetermined by the state level of economic development more than by the level of political development (10, 33).

Lockard, Fenton, Iannaccone, and Campbell believe that the political institutions of the state are extremely influential in determining policy outputs (33, 25).

In this study, Blalock's causal model is applied to the factors of the community college development, the level of education, the economic development level, and the level of inter-party competition in a state. The purpose of applying this model is to determine the developmental sequence of the factors. In this study, the inter-party competition input appears to be directly related to the community college development. The economic development level is directly related to the educational level. Thus, the fourth hypothesis of this study is correct, in that, inter-party competition is directly related to community college output.

Recommendations for Future Study

In order to learn more about the rapidly expanding community college development, the following recommendations can be made for studies related to the community college development:

1. A study should be made to determine if a community college development in a state shares other common factors such as a regional pattern of development, with the community college developments in the other states.

2. A study should be made to formulate a model which can predict and better explain the expansion of the community college development in the individual states.

3. Additional studies should be made on the relationship between the community college development and other meaningful factors.

BIBLIOGRAPHY

1. Alkin, Marvin C., and Hendrix, Vernon L. Input-Output Relationships in a Sample of California Public Junior Colleges. Los Angeles: Center for the Study of Evaluation of Instructional Programs, University of California, 1967.

2. Arney, Lawrence H. "A Comparison of Patterns of Financial Support with Selected Criteria in Community Junior Colleges," Doctoral Dissertation, University of Florida, 1969.

3. Atwell, Charles Alan. "Institutional and Community Characteristics Related to the Effectiveness of Transfer Programs in Florida Public Junior Colleges." Doctoral dissertation, University of Florida, 1968., p. 154.

4. Blalock, Hubert M., Jr. Causal Inferences in Nonexperimental Research. Chapel Hill: The University of North Carolina Press, 1964.

5. Blocker, Clyde E., Plummer, Robert H., Richardson, Richard C., Jr. The Two-Year College: A Social Synthesis. New Jersey: Prentice-Hall, Inc., 1965.

6. Bogue, Jesse Parker, The Community College. New York: McGraw-Hill Book Company, Inc., 1950.

7. Commission on Higher Education. Higher Education for American Democracy: A Report of the President's Commission on Higher Education. New York: Harper & Brothers, 1948, p. 67.

8. Crew, Robert E., Jr. State Politics. Belmont, California: Wadsworth Publishing Company, Inc., 1968.

9. Directory: American Association of Junior Colleges. Washington, D.C., 1969, 1970, 1971.

10. Dye, Thomas. Politics, Economics, and the Public: Policy Outcomes in the American States. Chicago: Rand McNally & Co., 1966.

11. Ells, Walter C. The Junior College. Boston. Houghton Mifflin Co., 1931.

12. Engleman, Lois E., and Ells, Walter Crosby. The Literature of Junior College Terminal Education. Washington, D.C.: American Association of Junior Colleges, 1941.

13. Erickson, Clifford G. "The Community College--Keystone for Change." Junior College Journal (March, 1970), Vol. 40, No. 6.

14. Establishing Legal Bases for Community Colleges. Washington, D.C.: American Association of Junior Colleges, 1961.

15. Fenton, John and Roueche, E. "Educative Resources Information." Junior College Research Review (November, 1968), Vol. 3, No. 3.

16. Fiea, David A. "And Nevada Makes 50." Junior College Journal (March, 1970), Vol. 40, No. 6, p.51.

17. Gilliland, Richard John. "Members of Boards of Trustees of Florida Junior Colleges: Their Personal Characteristics and Opinions About Institutional Role and Governance." Doctoral Dissertation, University of Florida, 1969.

18. Gleazer, Edmund J., Jr., Editor. American Junior Colleges. 7th ed. Washington, D.C.: American Council on Education, 1967, pp. 4-6.

19. Gleazer, Edmund J., Jr. This is the Community College. Boston: Houghton Mifflin Company, 1968.

20. Guertin, Wilson H. and Bailey, John. Introduction to Modern Factor Analysis. Ann Arbor, Michigan: Edwards Brothers, 1970.

21. Harlacher, Ervie L. The Community Dimension of the Community College. New Jersey: Prentice-Hall, Inc., 1969.

22. Harper, William A., Editor. 1968 Junior College Directory. Washington: American Association of Junior Colleges, 1968.

23. Henry, Nelson B., Editor. The Public Junior College: The Fifty-fifth Yearbook of the National Society for the Study of Education, Part I. Chicago: University of Chicago Press, 1956, p. 69.

24. Hurlburt, Allen S. "State Master Plans for Community Colleges." Eric Index (January-December, 1970).

25. Iannaccone, Lawrence. Politics in Education. New York: The Center for Applied Research in Education, Inc., 1967.

26. Johnson, Lamar B. "A Look to the Future." The Public Junior College: The Fifty-fifth Yearbook of the National Society for the Study of Education. Edited by Nelson B. Henry. Chicago: The University of Chicago Press, 1956.

27. Kerlinger, Fred N. Foundations of Behavioral Research. New York: Holt, Rinehart and Winston, Inc., 1964, p. 388.

28. Key, V.O. Southern Politics in State and Nation. New York: A.A. Knopf, 1949.

29. Kintzer, Frederick C., Jensen, Arthur M., and Hansen, John S. The Multi-Institution Junior College District. Washington, D C American Association of Junior Colleges, 1969.

30. Matthews, James E. "A Study of Certain Input-Output Relationships on Selected Community Junior Colleges." Doctoral Dissertation, University of Florida, 1970.

31. Medsker, Leland L. The Junior College: Progress and Prospect. New York McGraw-Hill Book Company, 1960, p. 17.

32. Medsker, Leland L. and Tillery, Dave. Breaking the Access Barriers. New York: McGraw-Hill Book Company, 1971, pp. 1-161.

33. Munger, Frank. American State Politics: Readings for Comparative Analysis. New York: Thomas Y. Crowell Company, 1966, pp. 46-403

34. Pike, Walter Lee. "An Analysis of the Relationship of Current Expenditure, Enrollment, and Expenditure Per Student to Certain Variables Associated with Education Quality for Texas Public Junior Colleges, 1959-62." Doctoral dissertation, University of Texas, 1963. Cited in Dissertation Abstracts. 24: 2761-62, January, 1964.

35. Prentiss, William Clark. "A Decision-Making Structure for Internal Policy Formulation in a Community Junior College." Doctoral dissertation, University of Florida, 1969.

36. Proctor, William Martin, Editor. The Junior College: Its Organization and Administration. Stanford University Press, 1927.

37. Rarig, Emery W., Jr. The Community Junior College. New York: Teachers College Press, 1966.

38. Robinson, James A. "Characteristics of Political Systems." The American Political Science Review, Volume LXI, No. 4, (December, 1967), p. 1114.

39. Rudolph, Frederick. The American College and University: A History. New York: A A. Knopf, 1962.

40. Rummel, R.J. "Understanding Factor Analysis." Journal of Conflict Resolution (December, 1967).

41. Russell, John Dale. "Dollars and Cents. Some Hard Facts," Higher Education: Some Newer Developments. Edited by Samuel Baskin. New York: McGraw-Hill Book Company, 1965.

42. Shannon, William G. "The Story is Beginning to Unfold." Junior College Journal (October, 1969). Vol. 40, No. 2, pp. 9-11.

43. Sims, David Melton. "A Study of the Relationship of Selected Institutional Characteristics of the Junior College of Origin to the Academic Performance of Public Junior College Transfer Students

[illegible] Universities in the University System of Florida." Doctoral dissertation, Florida State University, 1966.

44. Statistical Abstract of the U.S. 1970. Bureau of the Census, July, 1970, pp. 1-1015.

45 Stokes, Carl B. "Social Action and the Community College." American Association of Junior Colleges, April, 1969. Vol. 39, No. 7. pp. 20-23.

46. Swanson, Austin D. "The Cost-Quality Relationship." The Challenge of Change in School Finance. Proceedings of the Tenth National Conference on School Finance. Washington, D.C.: National Education Association, 1967.

47. The Carnegie Commission of Higher Education, The Open Door Colleges. New York McGraw-Hill, 1970, pp. 1-74.

48. The President's Committee on Education Beyond the High School, Second Report to the President. Washington, D.C.: U.S. Government Printing Office, 1957, p. 24.

49. The U.S. Book of Facts, Statistics and Information, New York: Essandess Special Edition, 1969.

50. Thornton, James W., Jr. The Community Junior College. Second edition. New York: John Wiley and Sons, Inc., 1966.

51. University of Florida's Comparative State Data File, Department of Political Science.

52. Vincent, William S. "Measuring School Quality: Output and Process." Institute of Administrative Research Bulletin, 4. May, 1964, pp. 1-5.

53. Wattenberger, James L. "The Organization, Administration, and Financing of Public Junior Colleges in the State of Florida." Doctoral dissertation, College of Education, University of Florida, 1970.

54. Wattenberger, James L., Cage, Bob, Arney, L.H. "The Community Junior College: Target Population, Program Costs and Cost Differentials." National Education Finance Project Special Study, No. 6, 1970.

55. Willingham, Warren W. Free Access Higher Education. New Jersey: College Entrance Examination Board, 1970.

56. Yarrington, Roger, Junior Colleges: 50 States/50 Years. Washington, D.C.: American Association of Junior Colleges, 1969, p. x.

BIOGRAPHICAL SKETCH

Howard Cary Freeman was born in Miami, Florida, December 30, 1945. His family moved to West Palm Beach, Florida, in 1951. He graduated from Forest Hill High School in 1963.

From 1963 to 1965, he attended Palm Beach Junior College. After receiving the degree of Associate of Arts, he transferred to the University of Florida. During his undergraduate years, he was a member of the student senate and the varsity debate team. He was selected for membership into Florida Blue Key in 1966. In 1967, he received the degree of Bachelor of Arts in Education.

In 1967, he began graduate school at the University of Florida and received the degree of Master of Education with a major in personnel services. From 1967 to 1968, he was employed as a high school guidance counselor in Marion County.

In 1968, he joined the faculty of Santa Fe Community College. In 1969, he enrolled in the Advanced School of the College of Education. In 1971, he received the degree of Specialist of Education with a major in higher education. Since that time, he has pursued his work toward the degree of Doctor of Education with a major in higher education.

He is married to the former Laurel Joan Kaufmann of Lake Park, Florida. They have two children, Carolyne and Bonnie. He is a member of Kappa Delta Pi and Phi Delta Kappa.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Education.

James L. Wattenbarger, Chairman
Professor of Administration

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Education.

Walter A. Rosenbaum
Associate Professor of Political Science

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Education.

Willis A. LaVire
Associate Professor of Administration

This dissertation was submitted to the Dean of the College of Education and to the Graduate Council, and was accepted as partial fulfillment of the requirements for the degree of Doctor of Education.

Dean, College of Education

March, 1972

Dean, Graduate School